

THE AUTOMOBILE

WEEKLY

NEW YORK—THURSDAY, JUNE 1, 1905—CHICAGO

10 CENTS

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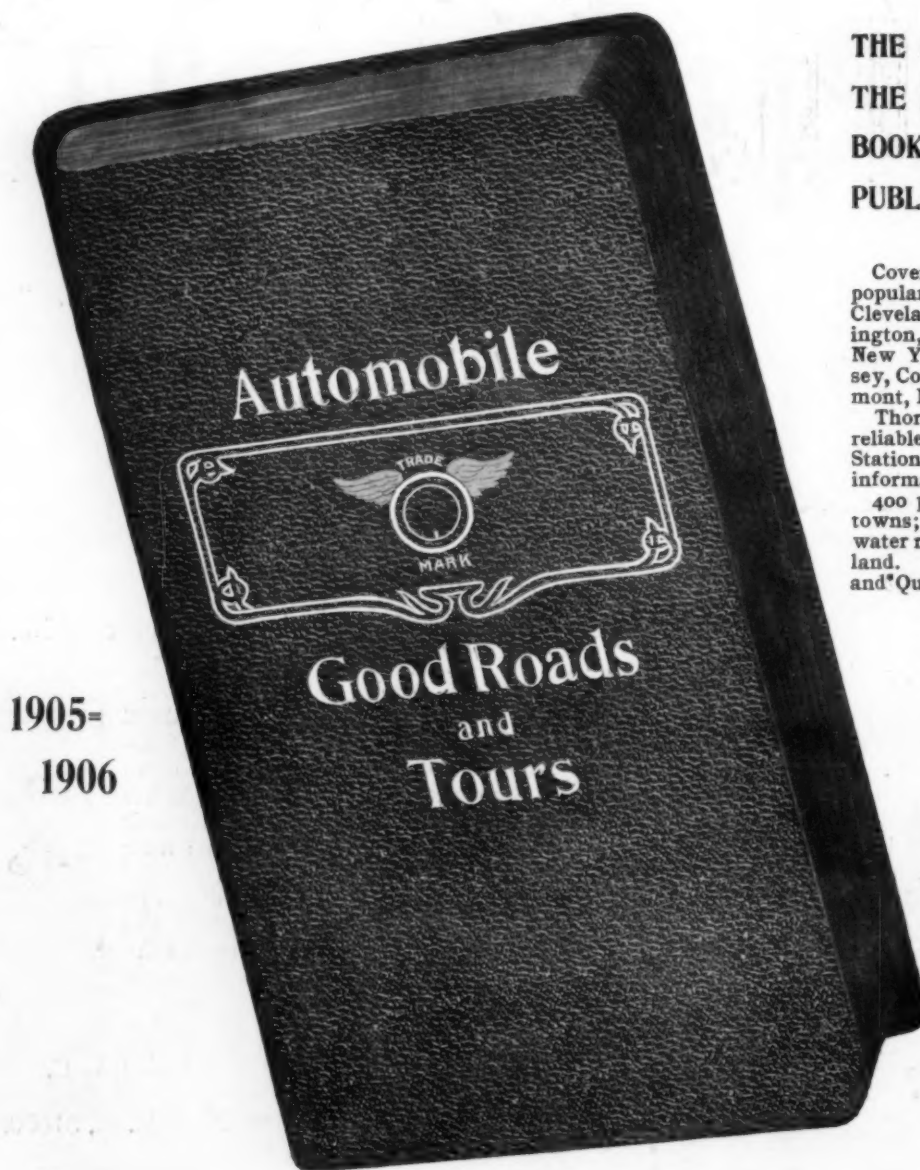
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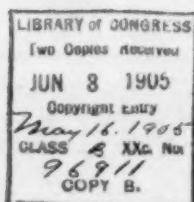
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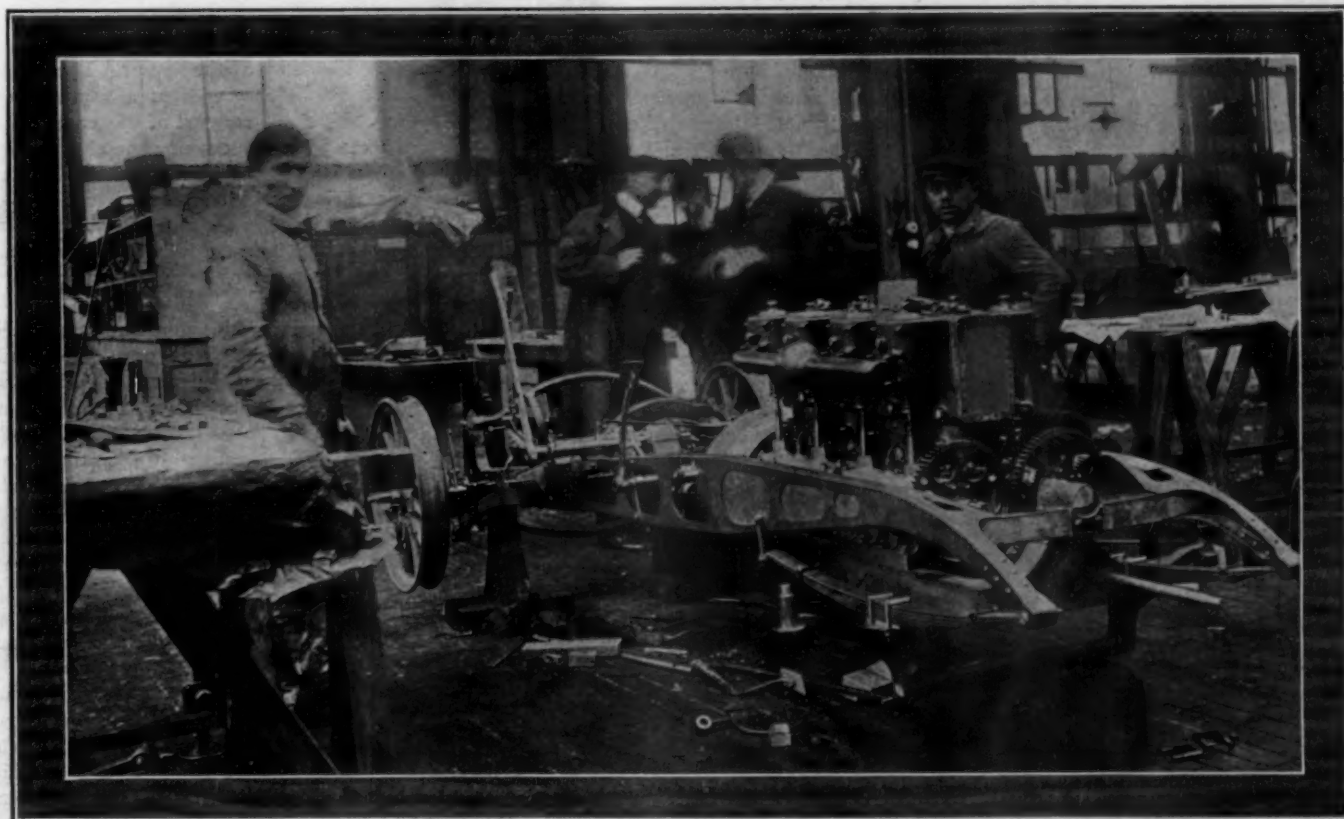
FRENCH CARS FOR THE GORDON BENNETT.

From Our Own Correspondent.

PARIS, May 18.—Close as we are to the date (June 16) on which the Gordon Bennett elimination trials for France are to be run, it will be interesting to learn how the cars to be used in these trials, and out of which the three cup defenders are to be selected, have been conceived by their

factory neighborhood, and some on the very racecourse itself; in fact, some drivers of the Darracq team have now covered the Auvergne course on their cup cars as many as forty-five times. They have been staying there for a month and will not leave until the end of the races.

The special requirements of the Circuit d'Auvergne have necessitated a few alterations of the accepted ideas in racing car proportions. The center of gravity of all the cars has been considerably lowered, and the wheelbase is relatively very short. The wheelbase of most cars is around 100 to 110



ASSEMBLING THE C. G. V. RACER. NOTE PECULIAR SLOTTED FRAME, REAR AXLE CONSTRUCTION, AND THREE POINT ENGINE SUSPENSION.

designers, and what are the principles in which their makers found best to trust the success of their efforts.

All the cars entered have now been put to more or less extended trials, some in the

Taking first the general considerations and remarks suggested by the tendencies of the year in racing car construction, we shall afterwards deal with the more detailed description of what cars are of special interest.

inches, 104 being the value adopted by Brasier and Renault. The shortest car is the Darracq, while the longest is the Gobron Brillié. This latter fact is explained when it is recalled that the Gobron people are

merely altering slightly their two-year-old racing machine, which so often led their name to victory. Great controversies have been going on as to what would be the tread best suited to the course. Some preferred the wide tread on account of increased steadiness, while others maintain that too wide a tread increases the difficulty of handling, while it also makes it more difficult to pass a competitor in a narrow stretch of road. The Darracq people adopted an extremely wide wheel gauge, while the tread of the Brasier car is only 49 inches, which is the narrowest. The gauge controversy is a most interesting one to follow up, and it will be very instructive to watch who will prove to be right in the final result of the race.

Passing to the wheels, the tires are generally 90 millimeters (3 1-2 inches) on the front, and 120 millimeters (4 1-2 inches) on the driving wheels, one maker using 105 millimeter tires at the front. The wheels are generally of a smaller diameter than last year, this for two reasons: first, because it makes it less difficult to obtain a very low center of gravity, and second, because the makers want to be able to gear up their cars easily for the other races of the year, such as the Vanderbilt and the Ardennes circuit, by merely changing their wheels for larger ones, this being allowed by the flatter profiles of these racecourses. It certainly would have been better, if the first reason alone was to be considered, to use cranked axles and 36 1-2-inch wheels, but the second reason prohibited this, while at the same time such a construction becomes difficult when a propeller shaft drive is used. De Dietrich and Panhard, however, are using wheels of fairly large dimensions.

Shock absorbers will be extensively used, the Trauffault having the lead, but we shall, however, direct the reader's attention upon the C. G. V. rear spring system, described further along. All the frames are made of pressed steel, Panhard being faithful to their two wood stiffeners, remains of their former armored wood frames. All the wheels are of the artillery type, with the exception of the Darracqs, who come back to the wire wheel construction, a bold step to take against fashion.

The steering arms connecting-rod is generally behind the front axle; this is not as good a mechanical construction as the rod before the axle, but it is safer, inasmuch as it is thus protected by the axle forging in case of collision with a dog, sheep or other obstruction.

The power of the engines varies greatly, from the Darracq and the Renault, which are of a bare 90 horsepower, to the Panhard of 125 horsepower, and the De Dietrich of 135 horsepower. The facility in starting and stopping has been very closely studied, and as it is a distinctly clutch depending question, great ingenuity has been displayed in the construction of these. The flywheels are slightly heavier than last year, to de-

crease the slackening of the engine when the load is put on. The cone clutch, direct or inverted, has the greatest number of followers, most of them adopting means of locking the cones together, once engaged. One maker, however, has adopted the Mercedes type of spiral clutch, while Panhard and Clement-Bayard have adopted the alternated metal plate clutch, which is certainly one of the best types made.

The tendency is to place the engine as far behind the front axle as possible, in order to relieve the front tires and increase the adhesion of the rear wheel tires.

Inlet valves are mechanically operated on every car; this is the definite triumph of a good and hardly-fought-about principle. In the majority of cases the valves are placed symmetrically over two distinct cam-shafts. Magneto ignition is used on all the cars, in some cases with battery ignition as an auxiliary. Three and four speeds are fitted by about an equal number of makers on each side, while the double sliding gear as first used by Mercedes seems to meet with universal adoption.

Propeller shaft drive seems to be on the gain, as De Dietrich, Brasier and Gobron are the three last champions of the side chain, Hotchkiss and Clement having already given way before the cardan joint.

Most of the water jackets are cast integral, Panhard, however, sticking to their old spun copper system, simply replacing the tin solder heretofore used by silver soldering, and Renault using screwed on jackets formed of copper plate hammered to shape. The centrifugal pump is used by all makers, even Renault, with the single exception of Brasier, who uses the natural circulation or thermo-syphon system.

The honeycomb radiator seems to have practically died out on account of its fragility and has in most every case been replaced by the Cloisonné, consisting of finned tubes, the fins of which are soldered on, separating plates making a solid piece of the whole construction. The fan directly behind the radiator seems to lose favor, and is replaced by suitable shaping of the fly-wheel and clutch drum arms.

The brakes are very powerful, as was to be expected on the course considered. The Darracq and the C. G. V. are the lightest cars, and this should be a very great advantage for them in starting, stopping or speed changing.

Passing to a detailed description of the cars which were open for the examination of the press, leaving out those which have already been described, we shall consider first the two last ones out, viz: the Charron, Girardot & Voigt and the Renault.

These two cars are very interesting, as they are those (especially the first named) which in their general conception depart most from the conventional model of car.

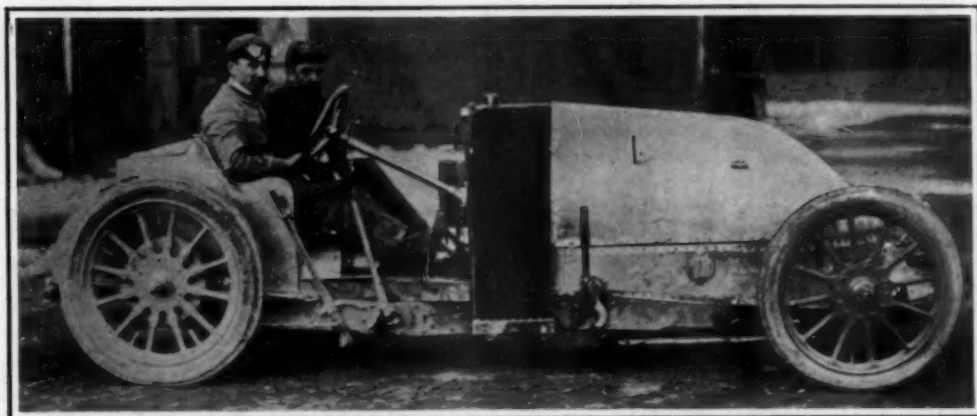
The C. V. G. car, like all other constructions of this high-class concern, is the materialization of Girardot's ideas, while he himself is to drive it. We previously de-

scribed the engine, work on which had been begun as far back as eight months ago. This engine was mounted on a special chassis which Girardot took to Auvergne, where he used it a great deal on the circuit, and from his observations there he decided upon the particulars of the car he would build. Coming back to Paris, he set to work, and the car which is now described was the outcome. This car, the only one which the C. G. V. interests are entering and trusting all their eggs to that one basket, has received the utmost attention during its manufacture, and it is not an exaggeration to say that more care was expended upon it than upon any other three cars entered by their competitors.

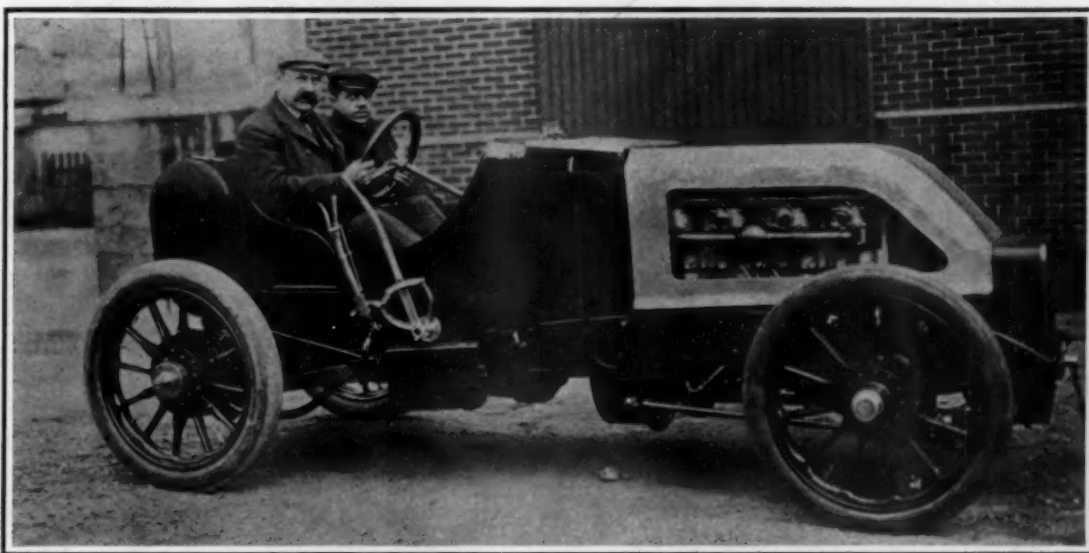
Under test the engine has shown remarkable efficiency. It has cylinders 160 mm. bore and stroke (roughly 6 1-2 inches), and gives 100 horsepower at 1,000 revolutions a minute, which is normal speed. It can, however, be speeded up to 1,200 r. p. m., at which rate it develops 130 brake horsepower. The motor follows the usual C. G. V. touring machine lines, with symmetrical valves, large cast jackets with bronze plates screwed on, external distribution gears, and two independent systems of ignition, one by high tension magneto and one by storage battery and coil. A point to be noted is the globular gas pocket placed on the inlet piping, which can be plainly seen in the photo reproduced on page 663, and which is said to add greatly to the flexibility of the engine. The engine crank-case is cast without any protruding arms, and the lower part of this case cannot be removed without taking the engine from the car, this being considered unnecessary on a racing car where there is no hope of doing any good in the race after an accident necessitating the removal of the crank-case bottom. However, large inspection plates are provided.

The engine is bolted upon a pressed steel cradle, which the front page photograph brings out, and which is suspended by three points on the frame proper, the idea being to obtain a light construction, and this without making it necessary to place the engine high up in the frame. The clutch is of the cone type. The change-speed gear case is bolted direct to the chassis members, and there is consequently a universal joint between it and the engine. The change-speed gearing was made regardless of cost, and contains two sliding sets, giving four speeds and a reverse with direct drive on the high gear. All the gears and their shafts are cut from a solid square block, and no keys, screws or bolts whatever are used in the change-speed gear case contents, all the different members being a solid piece of metal. This is Girardot's pet method, and while it is an expensive one, it certainly permits a high-grade light construction.

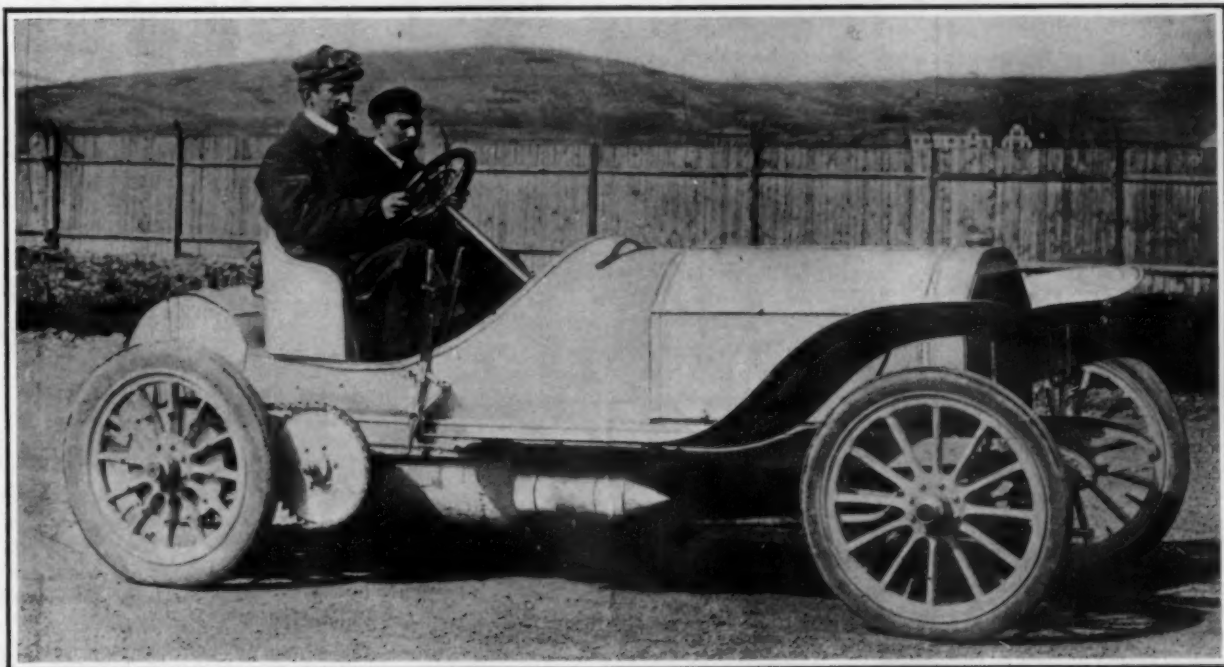
The steering system is of the usual type, very much inclined. A peculiarity of the steering wheel, however, should be noted; the rim is plain and polished as usual, but the inside of the rim carries a number of



RENAULT 90 HORSEPOWER GORDON BENNETT RACER. NOTE HORSESHOE RADIATOR IN FRONT OF DASH WHICH HAS FORCED CIRCULATION. CAR HAS ONLY 5 INCHES ROAD CLEARANCE.



C. G. V. 100-130 HORSEPOWER GORDON BENNETT RACER. NOTE CHARACTERISTIC SHAPE OF BONNET AND LOCATION OF RADIATOR, ALSO NEW REAR AXLE SUSPENSION.



BARON DE CATERS IN THE MERCEDES SPECIALLY DESIGNED 120 HORSEPOWER RACER. THREE OF THESE MACHINES WILL REPRESENT GERMANY IN THE GORDON BENNETT RACE.

notches or teeth in which the driver's fingers take their position during an effort, and which prevents the hand from slipping, this being a very practical solution of the steering wheel problem and worthy of being adopted on all powerful touring cars, as it does away with the unsightly cord or leather band winding which the drivers of these cars are generally fond of putting around their wheels, while it is much more effective, the notches being just about the size of the average man's fingers.

The usual brake and gear side levers are fitted, and three pedals are at the driver's disposal—one on the clutch, one on the differential brake, and one which acts on the hub brakes, together with the side lever.

All the brakes are internals, and as it is expected that they will have to stand considerable wear and tear in the race, very special attention was paid to their construction by Girardot.

The rear axle construction, for the study of which the reader should refer to the photograph on page 665 is absolutely special and new, being a development of what has been a successful practice on steam locomotives.

The side members of the frame finish in what may be called a fish-tail shape, and carry each a tempered steel guide in which the rear axle plays. This guide is slightly curved, its center being at the center of the universal joint of the propeller shaft; the latter is not subject to any variations in length. The live axle is a cast steel construction and carries slides held in the previously described guides, the axle being mounted on ball joints in its slides, so that it can take absolutely any position. Two half springs, one on each side, bear the weight of the car, being fixed by their light end to the axle and by the heavy end to the frame. Rubber buffers are fitted at both top and bottom of the guides in order to prevent any jars in case of undue shocks taking place. The springs do not transmit any effort from the drive, this being entirely and at once taken up by the slides and

to be quite a revelation, and it is certain that a lot will have to be thought of it if it successfully goes through such a race as that in Auvergne.

The chassis frame is of quite novel outline, as will be seen from the view of the stripped car and from the accompanying sketch of one of the frame side members. It presents a marked convexity in the horizontal plane, the central third being wider than the rear third, which in turn is considerably wider than the front portion. The side and cross members are very high, so as to obtain the maximum of stiffness, while they are thoughtfully pierced out in order to obtain the maximum of strength and lightness. The fore end of the frame is much higher than the rear end, this on account of the rear axle construction. The impression which the car makes upon an onlooker, with its curved and odd lines, is of some huge reptile about to jump.

Although the car is very low, the ingenuity with which its details have been worked out is such that a road clearance of 18 centimeters (7 1-4 inches) has been obtained.

The entire shaft line from starting crank to differential lies horizontal when the car is in motion over even ground, and all friction losses in the different joints are thus obviated under normal conditions.

The wheelbase is 2 meters 50 (98 inches) and the tread 1 meter 35 (a little over 53 inches). The wheels are 820 mm. diameter at the front (32 1-4 inches) and 880 mm. at the rear (35 inches), the four tires being 5 inches in size.

The performance of this remarkable car is anxiously awaited by every one in the trade, as it may mark new and important departures in touring car construction.

The Renault car, although less of an experiment, in the favorable meaning of the word, is however, quite novel also. In this car the makers adopt the idea which we saw before in Harkness's freak car in 1903, in Külick's Ford in the same year, in Oldfield's *Green Dragon* in 1904, and in Baker's

has all mechanically operated valves, on the same side of the engine, over a single cam shaft, with cylinders cast in pairs. The only difference from the other Renault engines lies in the water jacket, which is made out of hand-hammered copper, in halves, fitting over the castings and riveted



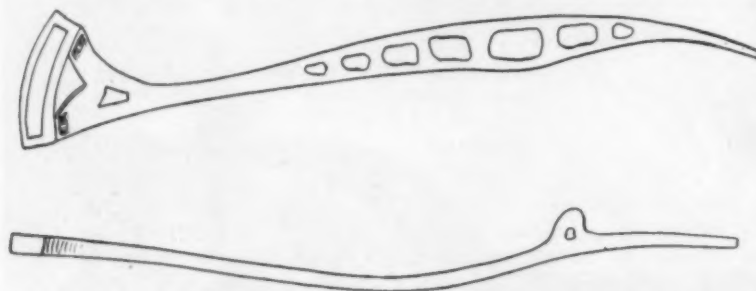
SKETCH OF C. G. V. RACING WHEEL.
Note serrated inner rim, giving finger grip.

together. Lubrication is forced by a pump as in their ordinary cars, a gear driven eccentric from the cam-shaft acting upon a plunger pump connecting-rod.

Ignition is by Simms-Bosch high-tension magneto driven through spiral gears, all the distribution gearing of the engine being fully enclosed. For starting, auxiliary storage batteries are fitted, as it would be a great exertion to pull the engine over fast enough to obtain sufficient current from the magneto.

What is a notable fact in the Renault history is that for the first time since they have made cars, they have fitted a pump to their cars for the circulation of water. A horseshoe-shaped tubular radiator consisting of three rows of tubes, counting from outside toward the inside, is fitted behind the hood and the central part of the same consists of a large tank. The pump which takes water from the tank sends it to the lower part of the cylinders, wherefrom it ascends to the top, absorbing heat from the walls; therefrom it is forced into a small pocket at the very top of the radiator, which pocket distributes it in the outer layer of tubes of the cooler; from the bottom of these tubes it ascends again through the second layer to a second pocket right under the first, and from this pocket it distributes itself in the third and last layer, at the bottom of which it returns into the tank to be pumped out again.

The steering pillar has plenty of rake, and the steering system is by worm and sector. A little under the steering wheel is a small hand lever, which is the only means at the driver's disposal to control the engine. In its first position it cuts off the gas supply entirely through the throttle; in a second position it leaves the governor absolutely free to act upon the running of the engine, while if pushed a little further it cuts the governor out and permits to drive the engine at any speed desired. The object in uniting all these functions in a single lever is to make



SKETCH PLAN AND SIDE ELEVATION OF C. G. V. CURVED AND SLOTTED FRAME.

guides. It is claimed that were the springs to break, the car would still be good to finish the race honorably, minus its rear suspension, provided that the shocks did not put something else out of commission. The two guides are united by tubular cross ties, forming a very strong carrying axle. This absolutely novel construction is expected

Torpedo, as well as in that *Stabilia* car which attracted so much attention at the last Paris show—that is, they hang the chassis frame below the axles, thus obtaining a car that clears the ground by barely 5 inches, which as a whole, is extremely low.

The engine is an exact but enlarged copy of the Renault standard motor, that is, it

it as seldom as possible that the driver has to leave his steering wheel.

Three pedals are fitted, one for the clutch, one for the clutch and transmission brake, the third on the rear wheel brakes, leaving the clutch in engagement. The driver consequently has at his disposal two pedal brakes, which fact, however, does not suppress the side lever acting on the wheel brakes.

The change-speed gear is the usual Renault construction, giving three speeds and reverse, with direct drive on the top speed. The clutch is of the inverted leather faced cone type, as in the touring cars; a male cone fitted with leather is pressed against a female cone which is sawed in places in order to make it slightly springy so that it will be smoother in its action. Drive is through a propeller shaft having two cardan joints, the entire shaft line being horizontal on level ground, under load. The front axle is a straight brazed-up tubular construction with Eckerman type steering knuckles, the upper arm being much longer than the lower one. The steering connecting bar is in front of the axle and well protected by a wooden lining and also by a cross-bar riveted in front of the frame and which would hit any obstruction before the steering rod, both being at the same level.

The Panhard machine develops 125 horsepower at normal speed, and in outline and construction is but slightly altered from last year's Vanderbilt cup car. The car and engine were illustrated in the issue for April 1.

THE GERMAN ENTRIES.

The Mercedes machine develops 130 horsepower at 1,000 r. p. m., although it is only of 90 horsepower nominal. The engine, like Panhard's and Hotchkiss's, is a mere enlargement of last year's. The great and only alteration resides in the change-speed gear case, which is getting smaller and smaller every year. It is only sixteen inches long over-all, and contains four speeds and reverse with direct drive, by means of two separate sliding sets, as usual. The high-gear combination, however, is absolutely novel, and the greatest secrecy is kept on the subject. At that speed the wheels of the car turn at the same rate as the flywheel of the engine. The car is said to have gone at the rate of 180 kilometers (112 miles) an hour, under Jenatzy's control. This car, probably, will be the model of the 1906 touring car.

The DeDietrich car has four cylinders cast in pairs, the bore being 190 mm. and the stroke 150 mm., giving 135 horsepower at 1,200 revolutions per minute. The car is fitted with made-and-break magneto ignition, has a metal-to-metal clutch operated by expanding segments, and the governor acts on the inlet. [Photograph of this car was reproduced in *THE AUTOMOBILE*, for May 25.—Ed.] Change of speed is through two sliding sets, giving four speeds and reverse; drive is by side chains. The

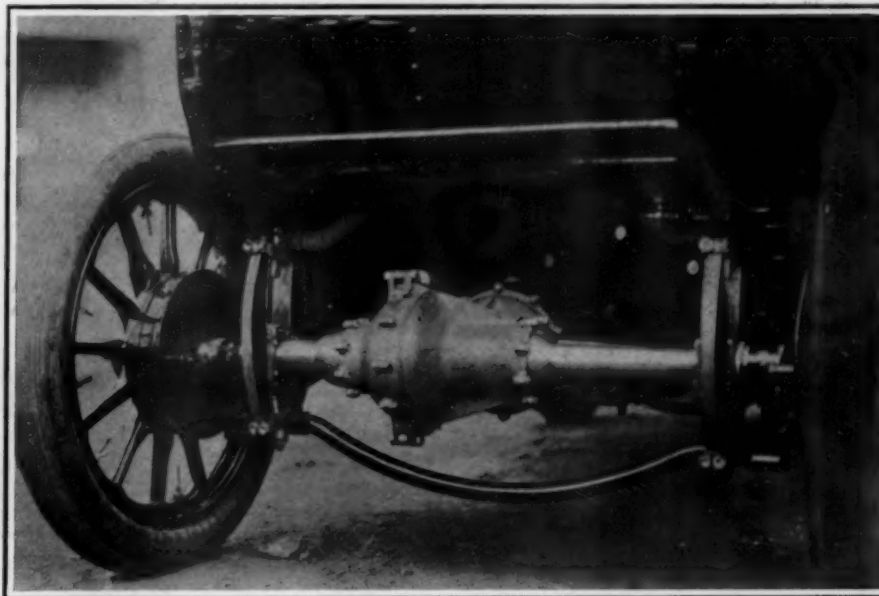
water tank holds about 40 liters and encloses the honeycomb radiator; circulation is by centrifugal pump. The fuel tank capacity is 180 liters. The front wheels are 870 mm., fitted with 90 mm. tires, and the rear wheels 920 mm., with 120 mm. tires. This car also has gone 180 kilometers an hour on the level.

The Clement-Bayard has the same size engine as the C. G. V., and the two cars will be interesting to compare, one being chain driven, and the other bevel-gear driven.

Regulations for the Race.

Special Correspondence.

PARIS, May 20.—Naturally, discussions of everything connected with the Gordon Bennett race occupy a great deal of public attention, now that we are but twenty-seven days from the preliminary races for this classic event. The question of non-skidding bands has been raised, it being



PHOTOGRAPH OF BACK OF C. G. V. GORDON BENNETT RACER.

Note Links Which Form the Rear Ends of the Frame Side Members and in Which Rear Axle Plays Vertically. Rear Spring Ends Are Shackled Below Axle.

feared that on such a difficult circuit the dangers from side slip might result in disaster. The objections to their use are twofold; first, the inability of non-skid bands to resist the strain, and second, the increase of weight. Not many cars could add a set of anti-skid bands to their equipment without passing the 2,204 pounds allowed by the regulations. It has been proposed to allow all cars to weigh in without anti-skid bands, and add them afterwards, if necessary. This, however, has not yet been discussed by the sporting commission.

The question of controls on the circuit has also been under discussion for some time. It was the intention of the organizers to make this year's test as difficult as possible, and to this end a non-stop run of 342 miles was proposed. Rigolly, the

Gobron conductor, giving his impressions of the circuit, has stated that, leaving out of account ordinary windings in the road, there are 145 sharp and difficult turns.

It is strongly felt in public and administrative quarters that this year's races must be absolutely free from accidents. This feeling, indeed, has almost amounted to a passion. The Minister of the Interior having demanded controls on the circuit, the Sporting Commission of the A. C. F. met yesterday and fixed three, at Laqueville, Pontgibaud and Rochefort. The first two will be used only to equalize the space between cars. Thus, any car arriving at Laqueville or Pontgibaud less than three minutes after its predecessor would be stopped the necessary length of time to take up its regulation position. By this means each car will have the road entirely to itself on the most difficult and winding portions of the circuit, namely, from Bourg-Lastic to Chambon, and on the difficult descent from the Cratere de Volvic to Cler-

mond-Ferrand. Every car will be stopped at Rochefort, given a control ticket and restarted. This will, of course, complicate the work of the timers, but a perfectly safe circuit will be assured. No recharging of cars will be allowed in the controls; neither will any repairs, either to motor or tires, be permitted. Charging and repair stations must not be placed more than one kilometer before or after the controls, and they must be visible at least 300 meters ahead of the cars in the direction of the course.

In future racing cars will not be allowed on the circuit unless bearing in very distinct figures the official starting numbers obtained a few days ago by the drawing of lots. Also, after June 2 the circuit will be entirely closed to racing machines, and very probably to touring cars also.

Climbing Dead Horse Hill in Worcester.

Success of the First Meeting and Excellence of the Course Raise It to National Importance.

Special Correspondence.

WORCESTER, MASS., May 26.—The Worcester Automobile Club, by its successful conduct of the climb up Dead Horse hill on Thursday, has added another to the list of national competitions of the first class.

It was the first contest on this hill, and it certainly will not be the last, judging from the splendid success of the meeting. The hill, which will be remembered by many who took part in the New York-Boston run, is a stiff one, as the accompanying surveyor's profile shows, and has the advantage of giving straightahead going all the way to the top. The road is narrow and the surface in places is rough.

begin to appear. Near the finish line the view broadens out over the picturesque broken and tree-shaded country stretching away for miles to the distant horizon.

Arrangements for starting and timing the cars were good and there were no delays. Soon after 1 o'clock the first car was sent up the hill and every few minutes after that contestants dashed past the starting point until the three score trials had been completed in the early evening.

The record for the hill was made by the 90-horsepower Mercedes of S. B. Stevens, which covered the mile in 1 minute and 9 seconds, after the Campbell driver had been allowed to make an official trial,

outer rim intact. Some of the metal was forced through the flooring, but Campbell kept the car in the center of the course, coasting uphill with the flywheel dragging for about 100 feet, when the car stopped.

Second best time of the day was made by the Napier 60-horsepower racing car, which put 1 minute 12-3-5 seconds to its credit.

There was a great deal of speculation as to what the big Grout steamer would do, and when it had made the run and was clocked at 1 minute 21-1-5 seconds in the free-for-all, there was an equal amount of surprise and disappointment that it had not done better. After passing the starting line with Cannon at the wheel, the huge steamer was going as fast or faster than the Mercedes had done, but evidently this rate of speed was not maintained to the top. All the big cars had trouble in keeping on the road, and this was apparently the case with the steamer, which slewed a good deal on bad spots.



SNAP SHOT OF NAPIER CAR JUST AS IT CROSSED THE FINISH LINE ON DEAD HORSE HILL.

so that at the highest speeds it requires very skillful driving. This did not spoil the sport, however, because the few racing cars in the event were in expert hands, and the greater number of entries consisted of stock cars which were sent up in touring condition.

Dead Horse hill is about two and one-half miles from the city, and lies partly in Worcester and partly in the town of Leicester. The starting line was on Stafford street near the shops of the Plunger Elevator Company. All the contestants were given a flying start of two hundred feet, being sent off down a slight incline to the tape and then crossing a bridge over a little creek before striking the first steep incline. This part of the course is shaded on both sides with a growth of chestnut trees, and the top of the first elevation was one of the vantage points for spectators. While going up the hill a narrow panoramic view is had on looking back through the green frame of trees until the towers of the city

having never been over the course before. In the final open event the big racer started again, but did not reach the top of the hill. When it dashed past the stand with the engine racing on one of the lower gears, there were some who predicted that the fragile Mercedes would not stand this punishment, and were not surprised when considerably more than a minute passed and the officials at the top telephoned down that the car had not arrived.

It was a relief to everyone when the report finally came down that the Mercedes had stopped up the hill with a broken flywheel and that no one was hurt. Several officials immediately went up the hill in a fast car and on their return reported that S. B. Stevens and Campbell had had a very narrow escape from serious injury if not death when the flywheel broke. It was only by the clever handling of Campbell that the big car was not ditched. Without the slightest warning, every spoke in the wheel broke off cleanly, leaving the

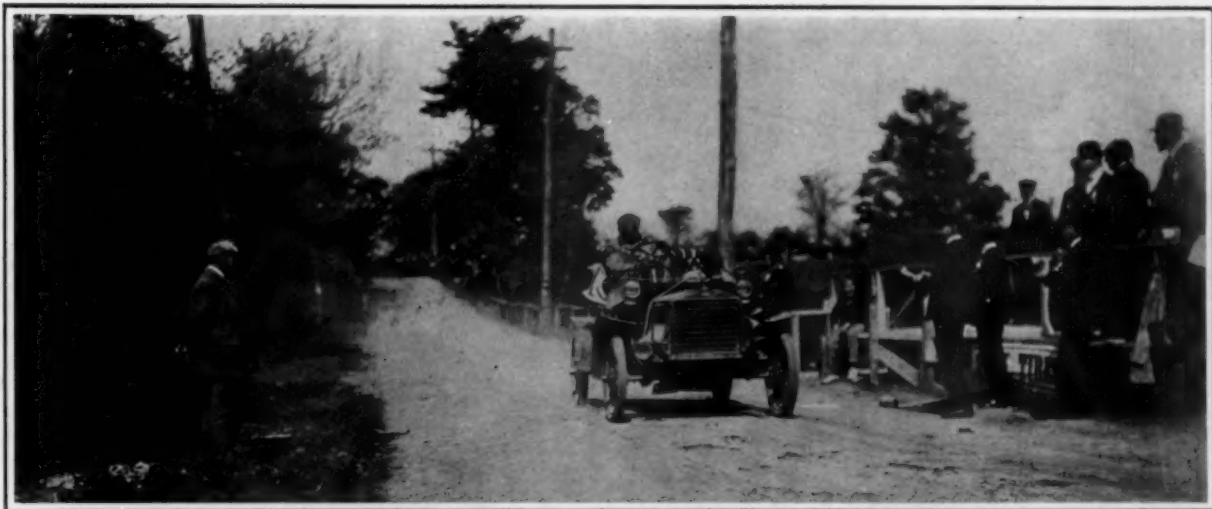
One of the sensations of the day was when the Stevens-Duryea 20-horsepower touring car climbed to the top in 1:36 in the free-for-all, beating a 50 horsepower, stripped, F. I. A. T. by seven seconds, the latter covering the mile in 1:43.

The first car sent away was the 24-horsepower Pierce Arrow touring car of M. P. Whittall, in event A 1, for gasoline vehicles, stock cars, all prices, amateur championship of Worcester County, owners to drive. The carburetor of Mr. Whittall's car worked poorly, so that he made much slower time than in all of his trials. He covered the mile in 3:15-2-5. The other entrant was Arthur Mosher in a 35-horsepower Columbia, and his time was 3:46-2-5. The cars in this event had to carry full equipment and four persons. Mr. Whittall put up the cup for this event, and as he won it he turned it over to the committee to be contested for at the next year's climb.

The Stanley had event 1 all to itself.



STEVEN'S MERCEDES CAR GOING UP DEAD HORSE HILL AT THE RATE OF 52 MILES AN HOUR.



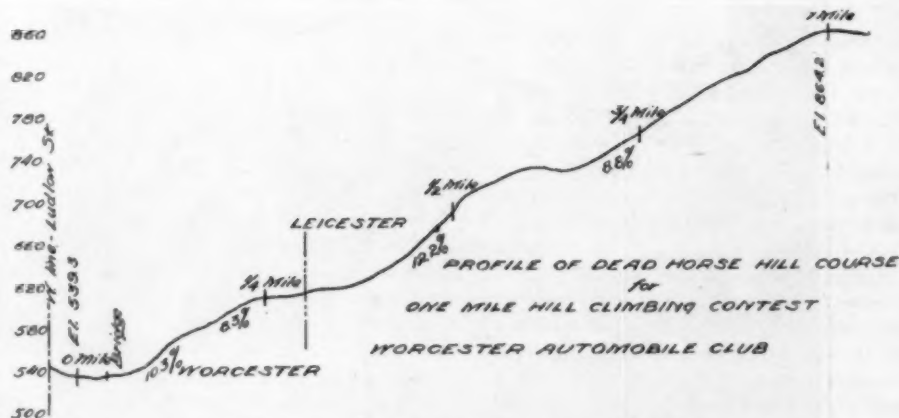
SCENE AT THE FOOT OF THE HILL AS ONE OF THE CONTESTANTS' CARS CROSSED THE LINE.



GEORGE CANNON DRIVING THE HUGE GROUT STEAMER ON A TREE SHADED STRETCH OF THE COURSE.

There were four entries: B. Holland made the fastest time of 1:38 in this event, two other drivers losing their steam, which caused delays.

G. H. Kimball and F. H. Peabody, driving 10 and 12-horsepower Fords, respectively, took first and second honors in the next event. The Elmore, a local entry, captured first in event 3, for cars listed at over \$1,250 but under \$2,000. H. P. Maxim, in a 16-horsepower Columbia, had an easy victory in the next event, covering the hill in 2:45 2-5, or 20 seconds better than his nearest competitor. This little car got a lot of applause as it dashed up the steep grade, and its performance gave the sharps a surprise and brought out a lot of favorable comment.



PROFILE OF THE DEAD HORSE HILL ROAD AT WORCESTER, MASS.

Summaries of Events in Worcester Hill Climbing Contest.

Steam Cars, Stock. All Prices.			
Driver	Car	H.P.	Time
1 R. Holland	Stanley	10	1:38
2 F. B. Durbin	Stanley	10	1:41
3 G. O. Draper	Stanley	10	3:29 2-5
4 F. H. Marriott	Stanley	10	5:12
Gasoline Stock Cars, Listed at \$850 or less. (Two persons carried, but removal of tonneau permitted.)			
1 G. H. Kimball	Ford	10	3:26 1-5
2 F. H. Peabody	Ford	12	3:31
3 S. G. Skinner	Oldsmobile	7	4:26
4 F. E. Wing	Queen	10	4:32 3-5
Gasoline Stock Cars, Listed at More Than \$850 to \$1,250. (Carrying two persons, removal of tonneau permitted.)			
1 H. L. Newton	Elmore	16	2:32 4-5
2 W. E. Eldredge	Buick	22	2:43 4-5
3 W. J. Lee	Jackson	18	2:58 3-5
4 Fred H. Pratt	Reo	16	3:22 2-5
5 G. H. Kimball	Ford	10	3:30 1-5
6 F. H. Peabody	Ford	12	3:43 4-5
7 F. E. Wing	Queen	16	4:04 4-5
Gasoline Stock Cars, Listed at More Than \$1,250 to \$2,000. (Carrying four persons; tonneau attached.)			
1 H. P. Maxim	Columbia	16	2:45 4-5
2 Jos. Downey	Stod.-Dytn.	15	3:05 1-5
3 John F. Daley	Pope-Htfd.	16	3:30 1-5
4 A. Dennison	Knox	14	3:44
5 Corbin	Corbin	16	4:16 2-5
6 G. H. Kimball	Ford	20	5:09 2-5
Gasoline Stock Cars, Listed at More Than \$2,000 to \$3,000. (Carrying four passengers; tonneau attached.)			
1 J. F. Duryea	Stvs.-Duryea	20	2:14 4-5
2 C. S. Henshaw	Thomas	40	2:22 3-5
3 J. S. Harrington	Thomas	40	2:50 4-5
4 A. R. Bangs	Franklin	20	2:52 2-5
Gasoline Stock Cars, Listed at More Than \$3,000 to \$5,000. (Carrying four passengers; tonneau attached.)			
1 John L. Snow	Peerless	35	1:43 2-5
2 George Soules	Pope-Toledo	30	1:46 3-5
3 John L. Snow	Peerless	24	1:47
4 George Soules	Pope-Toledo	24	1:47 2-5
5 Geo. G. Reed	Stearns	40	2:00 2-5
6 E. C. Bald	Columbia	35	2:07 1-5

The competition in event 5 was very close and interesting, J. F. Duryea taking first with a 20-horsepower Stevens-Duryea in 2:14 4-5.

John L. Snow and George Soules struggled hard for first honors in event 6. Snow handled a 35-horsepower Peerless, while Soules operated a 30-horsepower Pope-Toledo. Snow, the winner, covered the mile in 1:43 2-5. Both men drove twice in this event, each time with a car of different horsepower.

The next event was the most important on the program, as it afterwards turned out. The 90-horsepower Mercedes, the 50-horsepower Grout steamer and the 60-horsepower Napier were entered and started.

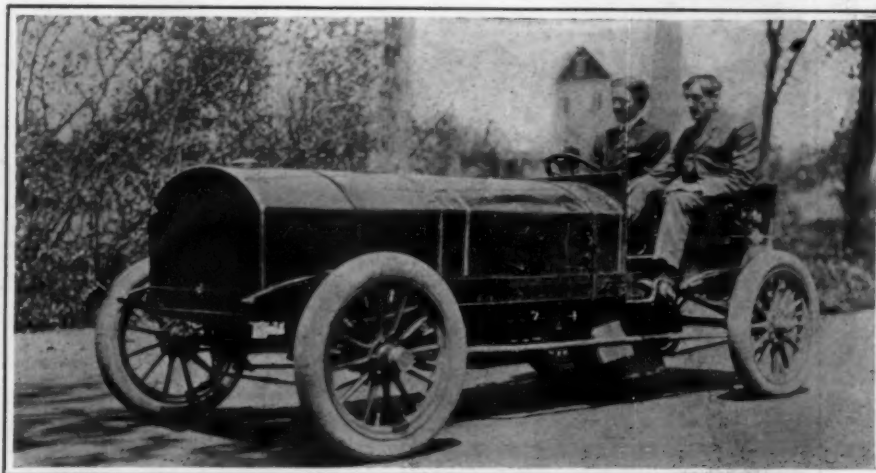
7 Alfred Thomas	Pierce	28	2:10
8 A. S. Lee	Pope-Toledo	30	2:16
9 A. Mosher	Columbia	35	2:59
Gasoline Stock Cars, Listed at More Than \$5,000. (Carrying four persons; tonneau attached.)			
1 George Soules	Pope-Toledo	30	1:46 2-5
Cars Weighing from 1,432 to 2,204 pounds, All Classes.			
1 S. B. Stevens	Mercedes	90	1:09
2 W. L. Hilliard	Napier	60	1:16
3 Geo. C. Cannon	Grout	50	1:23 2-5
4 A. S. Adams	Pope-Toledo	30	1:46 2-5
5 John Caswell	Columbia	35	1:58 1-5
Cars Weighing from 851 to 1,432 Pounds, All Classes.			
1 F. H. Marriott	Stanley	10	1:34 2-5
2 J. F. Duryea	Stvs.-Duryea	20	1:42 2-5
3 F. F. Cameron	Cameron	16	1:42 2-5
4 H. Raymond	Knox	14	2:01 3-5
Cars Weighing from 551 to 851 Pounds, All Classes.			
1 B. Holland	Stanley	10	1:24 2-5
2 F. B. Durbin	Stanley	10	1:25 1-5
3 E. F. Cameron	Cameron	16	1:47 2-5
4 F. H. Peabody	Ford	10	3:07 2-5
Cars Weighing More than 2,204 Pounds.			
1 E. C. Bald	Columbia	35	1:49
2 Geo. G. Reed	Stearns	40	1:49 1-5
3 C. S. Henshaw	Thomas	40	1:50
4 John Caswell	Columbia	35	1:54 2-5
Free for All.			
1 W. L. Hilliard	Napier	60	1:12 3-5
2 Geo. C. Cannon	Grout	50	1:21 1-5
3 B. Holland	Stanley	10	1:23
4 F. P. Durbin	Stanley	10	1:25 1-5
5 F. H. Marriott	Stanley	10	1:26
6 J. F. Duryea	Stvs.-Duryea	20	1:36
7 E. F. Cameron	Cameron	16	1:41
8 Fred A. Nagle	Flat	50	1:43
9 E. C. Bald	Columbia	35	2:01
10 G. O. Draper	Stanley	10	4:15 2-5
Gasoline Stock Cars, All Prices, for Amateur Championship of Worcester County, Owners to Drive.			
1 M. P. Whittall	Pierce	24	3:15 2-5
2 A. Mosher	Columbia	35	3:46 2-5

Cannon's performance with the Grout was distinctly disappointing to the large crowd, for it was expected that he would make the fastest time of the day. Honors went to the Mercedes, which rushed up the rise of 325 feet in 1:09; the Napier was second in 1:16.

Without doubt the closest competition in the climb came in the event for cars over 2,204 pounds. There were four starters in this event. Eddie Bald drove his 35-horsepower Columbia up the stiff climb in 1:49; G. G. Reed in a Stearns of 40-horsepower was exactly 1-5 of a second slower.

The free-for-all completed the afternoon's sport, and in this Hilliard, of Boston, in the 60-horsepower Napier, which was a year ago built as a reserve car for the English team in the Gordon Bennett contest, took first honors, negotiating the mile climb in 1:12 3-5. Cannon, in the Grout, received second place in the time of 1:21 1-5. It was in this event that the Mercedes met with the mishap that put it out of the running.

Although the day was not a holiday in town, there was an immense gallery of spectators, estimated at not less than 5,000, of all ages and sexes. The Worcester police and the Leicester constabulary were out in force, but could not keep the course



CANNON AND GROUT IN THE SPECIAL GROUT STEAMER-CANNON AT THE WHEEL.



SPECTATORS CROSSING A CREEK IN THE WOODS ON THE WAY TO THE COURSE.

free from spectators, and towards the end of the climb the crowd commenced to walk homeward down the course, even though the big cars were dashing uphill at express speeds.

There was a lucky escape from a bad mishap in event 5. A National touring car, driven by A. H. Waitt, with three other persons on board, turned over in some unexplained manner when about half way up the hill, all the occupants fortunately escaping without a scratch.

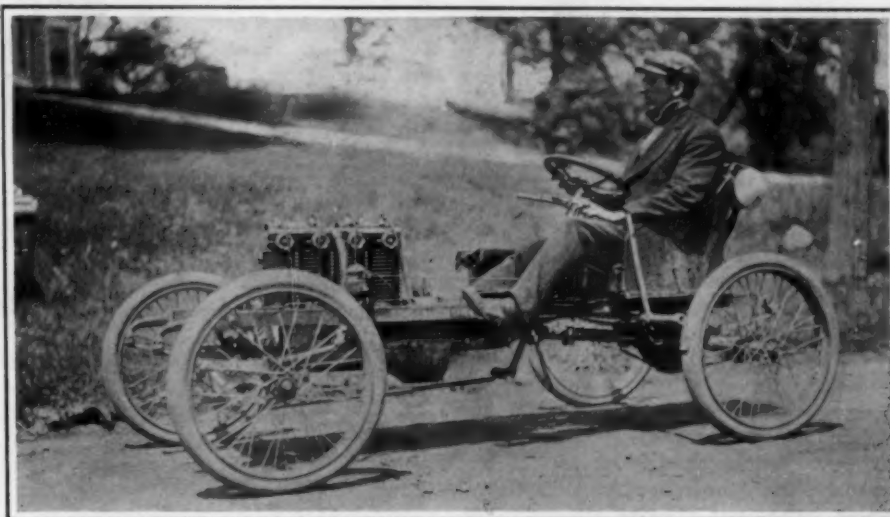
It had been the intention to time the trials with the McMurtry apparatus, but on Thursday morning the officials received a telephone message from New York that the apparatus was not in proper working order and would not be available. Fortunately, the wires had been strung from start to finish, and the committee raided an electrical supply house and secured two telephones and telegraph keys and sounders. These were rigged at both ends of the climb on the little wooden platforms by the roadside. Throughout the day, as each car was started, the timer at the bottom

notified the officials at the top by telephone and as the car approached the tape called

car crossed the tape. Instead of calling "three," however, another timer, who sat at the telegraph key, depressed it sharply as the car passed the starting line and the sounder at the top of the hill instantaneously notified the three watch holders there that the trial of the car had begun. This was an excellent method, as the cars had not gained sufficient speed when passing the starting line to make an observation inaccurate, and the preliminary counting over the telephone prepared the timers on top for the exact instant to start their watches. No car was allowed to start until the telephone message from the top announced that the course was clear.

After a car had made the ascent it immediately returned to the foot of the hill by another route, and there was consequently no crowding or confusion at the top.

Dozens of cars containing spectators were parked near the start, among them many



THE LITTLE SKELETON CAMERON AIR-COOLED RACER READY TO START.

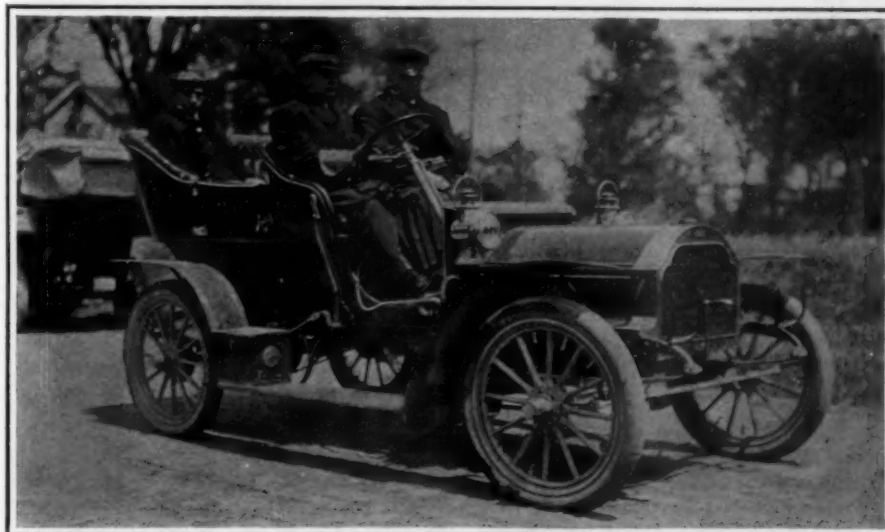
into the receiver "one!" "two!" at an interval that would make "three" as the

machines which carried more than 100 members of the Bay State Automobile Association down from Boston. There were also delegations from the Wachusett A. C. of Fitchburg and the Leominster and Providence clubs.

The prizes were silver cups in events A 1 and II, and bronze medals bearing the seal of the club and the heart of the Commonwealth were given to the other winners. Second place winners received badges.

There were the usual protests to be considered when the officials returned to the city. Only one was allowed by Referee Lee, the Buick driven by H. E. Shiland being disqualified because the muffler had been detached.

Those who were responsible for the success of the climb are: Referee, Elliott C. Lee; Judges, Lewis R. Speare, James Dorr; Timers, C. L. Stevens, J. C. Kerrison, J. Perley Kilgore, Frank L. Murdock; Starter, Asa Goddard; Clerk of Course, (Continued on page 677.)



STODDARD-DAYTON TOURING CAR THAT WENT UP THE HILL IN 3:05-15

A Little Talk on Cone Clutches.

By RENE M. PETARD.

THERE are few parts of the well-made automobile that require more delicate and careful adjustment than the clutch; for upon the smooth and effective working of this important device depend the practicability and durability of the machine as a whole, and, to a great extent, the comfort of those who ride.

If a clutch is too "weak," it will slip, perhaps continuously, thus taking up a large proportion of the power of the motor and at the same time generating heat that will soon destroy the frictional surfaces, whether of leather or metal. If not weak enough to slip continuously, the clutch may still be so defective that it will not permit the sudden application of full power in order to get out of a hole in the road, for instance, or up a short, steep grade.

IF CLUTCH IS TOO FIERCE.

On the contrary, if the clutch is too "fierce" it will, when let in, either cause the engine to stop suddenly or else greatly reduce its speed, thus setting up enormous strains throughout the mechanism of the car; other parts than the motor are of course affected by the sudden violent strains which are absorbed to the detriment of the parts. The tires are seriously affected by this harsh action, the sudden jerks wearing and tearing the rubber off the treads.

While it is true that the condition of the clutch depends very greatly upon the treatment it receives from the driver, still it is the duty of the manufacturer to supply a clutch that is correct in principle and in good condition when sold. It is also true that there are clutches which cannot be operated even by the most careful chauffeur without jarring and grinding.

If an excess of oil on the leather becomes burned by friction, the carbon deposit will prevent the necessary slight slipping of the surfaces when the clutch is engaged. If the leather is too soft, or if the cone is not made at the correct angle, the same results may follow.

EFFORT TO BE TRANSMITTED.

It is not possible to make a hard and fast rule to be followed in determining the effort to be transmitted by the clutch, for no limit is fixed by the engine. If the engine possessed a fly-wheel of infinite weight no application of the clutch, however sudden, could cause any appreciable slowing down of the engine, and there would consequently be no reaction on the part of the engine. Therefore this part of the question is merely a matter of fly-wheel weight and dimensions, which may easily be determined after the second side of the question has been settled.

This second side of the question is covered by the theory that the clutch should commence slipping as soon as the effort transmitted acquires a value in excess of

the strain which the clutch and driven parts are capable of safely withstanding. If a clutch was designed in strict accordance with this theory, however, it would not be satisfactory in practice, because: (1) The coefficient of friction of the leather varies with the temperature and the dampness or dryness of the atmosphere, so that at times the clutch would refuse to slip even when transmitting too great a strain, and at other times would commence to slip too soon. (2) If the parts are calculated very closely and are just strong enough to transmit the power of the engine, as is often the case, the clutch will not be sufficiently powerful when an extra effort is required.

MARGIN OF SAFETY.

These facts make it absolutely necessary that a margin of safety be allowed, and the clutch must be made capable of transmitting more power than the engine is capable of developing. French designers as a rule take this coefficient of safety in the neighborhood of two to three, varying somewhat with the weight of the car. As the inertia of a car weighing three tons is much greater than of a car weighing half as much, the former will evidently require a stronger clutch and a heavier fly-wheel for the same power.

All the foregoing relates to clutches of the ordinary cone type. In this type of clutch there are three things which, if varied in any way, will alter the power of the clutch; namely, the spring pressure; the leverage interposed between the spring and the clutch proper; and the coefficient of friction.

THREE ELEMENTS CONSIDERED.

It is necessary that these three elements should not be suddenly altered; otherwise all calculations will be upset. It is evident that the leverage cannot suddenly alter itself. The spring pressure may be suddenly changed through mechanical defects in the system. The seizing of a bearing, or the rusting of the spring (causing it to stick), the catching of the pedal and binding of the parts, are all possible causes of the alteration of the spring pressure, but these are matters that can easily be remedied. The trouble most to be feared is the sudden variation of the coefficient of friction caused by atmospheric changes; the heating of the clutch by slipping, and the change of contact conditions by oil or foreign substances which may accidentally find their way between the surfaces.

OTHER TYPES EMPLOYED.

In order to overcome these difficulties clutches have been designed in which the cone type is departed from. For small powers the normal pressure clutch with fiber segments working against cast iron drums, for instance, has given very good results,

since if the frictional surface is ample the coefficient of friction will vary but slightly. The pressure, therefore, will be the only point to be considered, and it can be very easily determined by the strength of the spring used. In higher powers, however, the effort required from the driver of the car would be too great.

The cone clutch gave a satisfactory solution of this difficulty because the effort of the pressure against the conical surfaces is increased by the pressure of the clutch itself, while the interposition of leather increased the coefficient of friction and gave a certain amount of elasticity. The angle has to be very carefully calculated, however, for if too sharp it will have tendency to scale and tear the leather and will make the clutch too fierce; if too obtuse, slipping will result. The quality of the leather must also be carefully considered, for if too soft, the clutch will slip and become covered with scales; and if too hard, it will wear and cut rapidly.

MODERN DISK CLUTCH.

A type of clutch now coming into vogue is somewhat similar to the Hele Shaw. It consists of two sets of alternating plates, one set sliding on keys solid with the driven shaft, and the other sliding on keys carried by an enclosing box which is part of the fly-wheel. When these plates are pressed together the drive may be made as powerful as desired by simply varying the number of plates. The pressure being perpendicular to the plates, there is no fear of seizing; the whole works in oil, which, with the large frictional surfaces, ensures long life and ample power in small bulk.

FRENCH MUFFLER COMPETITION.

Special Correspondence.

PARIS, May 18.—After several weeks' experiments in their laboratory in the environs of Paris, the technical committee of the Automobile Club of France brought their muffler competition to a close last Friday. The report of the sub-committee was presented to the full body, a feature of the meeting being a reproduction of the various muffler experiments by means of a phonograph.

For ordinary mufflers the gold medal was awarded to the Clair Silencer Co. (Conti invention); silver medal to Ossant frères; bronze medal to M. Carteret, and honorable mention to M. Cochaux. For mufflers with water circulation a silver medal was offered to Ossant frères and Lefebvre (Saint-Denis invention).

The new Paris automobile police regulations having especially stipulated the efficiency of mufflers, this competition draws the attention of the public to the best apparatuses at exactly the right moment.

An automobile 'bus line has been established between Claremont and Pomona, Cal. The line is now in operation, the vehicles making five trips daily.

Glidden Tour Schedule.

Arrangements for the Glidden Touring Trophy contest have been practically completed, and only minor details remain to be decided upon. One of the interesting decisions arrived at is that the contestants themselves are to have a voice in deciding what car makes the best showing. It was thought that the usual system of sending an observer with each car was not only undesirable, but was not productive of the best results; and the idea of allowing the competitors to express their opinions was conceived and adopted. The competitors' decision will be handed to the commission, and the members of the commission will take the vote into consideration in making the award, though they are not bound to decide according to the vote. The members of the commission are Elliot C. Lee, chairman; Dave H. Morris, William K. Vanderbilt, Jr., and the originator of the contest and donor of the cup, Charles J. Glidden.

Starting on July 11, the cars entered will cover a distance of approximately a thousand miles in a period of two weeks. Starting time each morning will be between 6 and 9 o'clock, and the cars must be checked up in the official register at the end of the day's run by 9 o'clock p. m. There will be no formal noon stopping places, the cars being permitted to select their own places. It is likely that most of the cars will informally gather during the noon hour at some convenient town. The route selected is shown by the official map published herewith.

It has been decided that if less than

fifteen entries are received, the tour will not be officially carried out, but those desiring to do so will go over the course on a simple pleasure trip, taking advantage of the hotel and other accommodations prepared for the official tour. As many more than the minimum number of entries have been assured, however, it is not likely that it will be necessary to fall back on this provision.

CLIMB TO THE CLOUDS.

The second annual "Climb to the Clouds," which will take place over the same Mt. Washington road that was used for the 1904 White Mountain climb, will be held during the ten days between July 10 and 20, and the American Automobile Association will be asked to sanction the contest. It is possible that during the ten days a tour will take place from Bretton Woods to Montreal and return, starting on July 10 and returning, bringing some Canadian automobilists, on July 15.

July 15 is also the date set for the arrival at Bretton Woods of the contestants for the Glidden touring trophy. It is also planned to devote a day to hill-climbing at Crawford Notch, up the two-mile carriage road on Mt. Willard. This will give a good day's sport where it can be witnessed by many who cannot get to the road used for the regular "Climb to the Clouds." The Mt. Willard road will be inspected by a party of New York and Boston automobilists which will leave Boston May 31.

The timing will be done by the Boston Chronograph Club, which handled this part of the work at last year's Mt. Washington hill climb.

It is believed that the second "Climb to the Clouds" will attract much more interest than the first. Among the features of special interest will be a special Stanley steam car which, it is said, is being built at the Stanley factory and will take part in the climb. The residents in the district in which the climb takes place are willing to do everything in their power to promote the event.

The management of the climb is in the hands of W. J. Morgan, of 116 Nassau St., New York, who will receive entries and give any desired information.

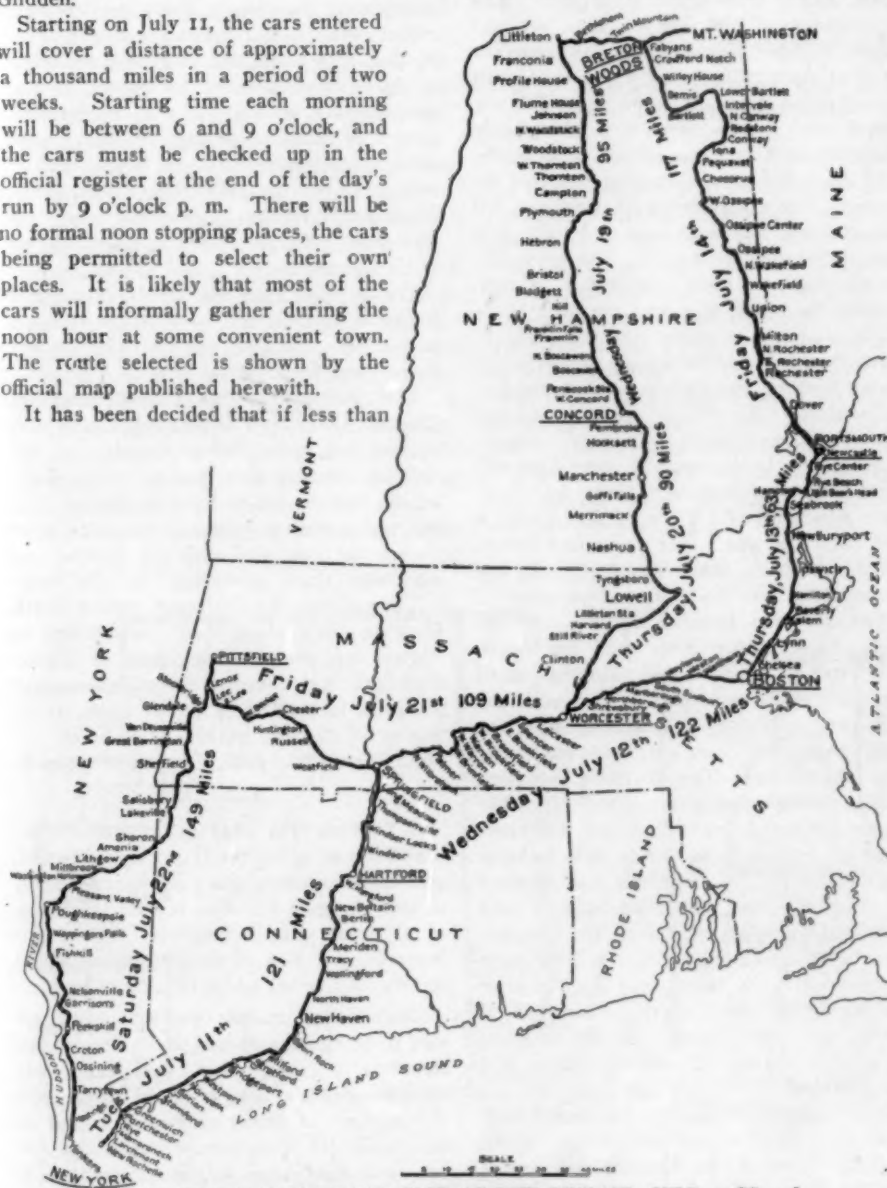
BRITISH G. B. TRIALS.

The British Gordon Bennett elimination trials, which take place over a forty-mile course on the Isle of Man on May 30, will be participated in by the following cars: No. 1, Star, driver disqualified for collision and his successor not yet nominated. No. 2, Star, driver F. R. Goodwin. No. 3, Darracq (Scotch), A. L. Guinness; No. 4, Wolseley, C. Bianchi; No. 6, Napier, Cecil Edge; No. 7, Napier, W. Clifford-Earp; No. 9, Napier, J. Hargreaves; No. 10, Siddeley, Sidney Girling; No. 11, Wolseley, Hon. C. S. Rolls; No. 12, Napier, A. E. Macdonald.

Numbers 5 and 8 have been omitted because of the difficulty of distinguishing between them and 3 at high speeds. With only the number 3 used there will be no confusion.

The Wolseley company is considered very fortunate in having secured the services of Hon. C. S. Rolls as a driver for one of its cars in the trials.

A road map and guide book for Northwestern Indiana have been published by C. S. Mendenhall, 512 Race street, Cincinnati, O., especially for the use of automobilists and others who desire to make use of the roads in this section of Indiana. The map is on a large scale and shows all the regular roads, the main touring routes being printed in black and red, distances between towns indicated on the map and reference numbers given for the guide book. In the latter a number of routes are described and the conditions of the roads indicated. The map is put up in convenient form for pocket use.



MAP OF THE GLIDDEN CUP TOUR OF NEW ENGLAND, JULY 11 TO 22,
SHOWING DAILY STAGES AND DISTANCES.)

Algiers-Toulon Auto Boat Race.

From Our Own Correspondent.

PARIS, May 15.—The second stage of the Algiers-Toulon auto boat race came to an end yesterday in a manner altogether unexpected by its promoters. For five days the boats had been confined to Port Mahon, unable to finish their run to Toulon owing to the rough sea. On Saturday, May 13, the weather being more settled, and reports from the open sea being favorable, the boats started off on the second stage of their journey at 4 A. M. They were seven in number: *Mercedes C. P.*, *Camille*, *Quand-Même*, *Mercedes-Mercedes*, *Fiat X*, *Malgré Tout*, and *Hercules*, the last two, owing to misfortune in the first stage of the journey, only following the racers and not competing.

Each boat was accompanied by a torpedo boat destroyer, as in the first stage, and a cruiser closed up the rear of the fleet. The wind freshened shortly after the start, and before noon the Italian boat, winner of the Algiers-Mahon stage, had to abandon the race, her crew being taken on board one of the destroyers, and the craft cleverly hauled up to the davits of the escorting torpedo boat destroyer. The *Fiat X* is the smallest of the boats, being only 28 feet long, having an open well, and thus being handicapped for sea work. At the same time the *Mercedes C. P.*, one of the best sea boats of the fleet, and the *Malgré Tout*, had to be taken in tow by their respective escorts.

The wind continued to increase in force and the sea to become rougher, as the boats neared Toulon, and before nightfall all of the crews had been taken off by the destroyers, and of the seven boats starting out from Port Mahon, five had been sunk and one was adrift. All that was left of the first sea-going motor-boat fleet was the *Fiat*.

The fate of the *Quand-Même* remained for a long time in suspense. When the gale broke in full force she was about 100 miles from Toulon. Being the largest of the fleet, 69 feet over all, and carrying a crew of eleven men, it was thought that she would run for the Spanish coast, but fifty-four hours after the start from Port Mahon, news was received that the crew had been landed at Cagliari in the Island of Sardinia. The *Quand-Même* had been taken in tow at 6 o'clock on Saturday evening, by its accompanying torpedo-boat destroyer; but the tow rope broke immediately and the craft drove off before the gale to the south-east, behaving admirably. Early Sunday morning she was again taken in tow, but broke loose a quarter of an hour later and continued under her own power until evening, part of the time being hampered by the tow rope in her propellers. At 5 o'clock in the evening, the gasoline having almost given out, another attempt was made to get into tow, but again without success. The crew then scrambled on board the destroyer, leaving the *Quand-Même* adrift

about 100 miles from Sardinia, and were landed the next morning at Cagliari, safe and sound. At the time of writing the tug sent out in search of the derelict has not yet fallen in with her.

In nearly all cases the rescue of the crews was effected only with great difficulty. About 5 o'clock in the afternoon the *Camille*, piloted by its proprietress, Madame du Gast, was being towed by a destroyer, when the cable broke and the racer went adrift in a heavy sea. Owing to the steel tow rope having become entangled in one of the destroyer's propellers, she was unable to render assistance and for a few moments the position of the *Camille* was critical. The cruiser *Kléber* immediately launched her lifeboat, but despite all efforts it was impossible to get near the *Camille*. The lifeboat was taken on board again, and a fresh tactic employed. The commander of the cruiser bore straight down for the *Camille*, and by a clever piece of seamanship brought the little craft almost alongside. A rope was thrown, seized and made fast, and the hardy Madame du Gast gripped the rope ladder with the intention of mounting on board the cruiser. She missed her hold, however, fell into the sea, and was rescued by the sailors and hoisted on board. The crew followed, and the racer was taken in tow. During the night, however, the boat broke adrift, and as the storm had increased so much that it would have been dangerous to search for her, she had to be abandoned.

The *Malgré Tout* had to be taken in tow when only twenty miles out of Mahon. Driven by a heavy sea, she came into collision with the destroyer, broke her bowsprit, which brought the mast down with it and caused a leak. The crew was immediately taken on board the destroyer, and ten minutes later the *Malgré Tout* sank.

The six men forming the crew of the *Mercedes-Mercedes* were got on board only after an hour's labor. The captain of the racer, who remained on her until the last, ran much danger of sinking with the boat. After three anchors had broken he was also rescued. The tow rope, however, broke shortly afterwards, and M. Jellinek's automobile yacht finished its career after an existence of barely two months.

The *Mercedes C. P.*, built and engined by the same firms, had behaved well until within a few miles of the coast. The sea then became so rough that the crew were transferred to its escort, and shortly after the handsome craft which glided out of Titrés yard amid such brilliant company only eight weeks ago was cut adrift and lost forever.

The dramatic ending of the motor boat race has caused much excitement in all circles. Some of the Parisian newspapers are trying to make a political job out of it, for, although a private enterprise, the

Algiers-Toulon race was favored by the government, torpedo boats and cruisers having been told off to accompany the racers and watch the course, and the minister of marine having presided at one of the banquets. The public, less anxious for political jobbery, asks what will become of the much-vaunted Mediterranean Cup, and the other valuable prizes which were more numerous than the competitors.

The first stage of the trans-Mediterranean race was a very different affair. Of the thirty odd boats announced as certain starters, only the seven named above came to the line. The United States auto boat *Gregory* failed to come in time; the English Napier boats, which Mr. Edge had promised, were not to be seen, and the fleet included only one foreign craft, *Fiat X*.

At 6 o'clock on the morning of May 7 the racing boats were started from Algiers, bound for Port Mahon, distance about 361 kilometers (225 miles). From the first the 29-foot Italian boat took the lead, which she maintained throughout the race, showing remarkable regularity, and entering Port Mahon in 13 hours, her average speed being 17 1/4 miles an hour. The French 42-foot boat *Camille*, with C. G. & V. engine, and piloted by Madame du Gast, finished second in 16 hours 25 minutes. The *Mercedes C. P.* was third in 17 hours, her sister ship, *Mercedes-Mercedes* (55-footer) fourth, in 18 hours 15 minutes, and the *Quand-Même* fifth, in 21 hours.

The *Malgré Tout* was towed home, and *Hercules* came in last, having been towed a part of the distance, but finishing by her own power in about 29 hours.

The builders of the *Camille* engines, Charron, Girardot & Voigt, lodged a protest against first prize being awarded to the *Fiat*, maintaining that, contrary to the regulations, she is not completely decked, that she was supplied with fuel by her escort during the run, and that she carried one man less than prescribed by the rules.

The Algiers-Toulon race called forth fêtes on every hand. Local committees in Algiers and the Spanish colony of Mahon organized gala events, and Toulon gave itself up to boat races of all kinds, naval battles of flowers, naval and military displays, fireworks, receptions and banquets.

A bearing will wear much faster if allowed to run loose than if properly adjusted, and will also have a much stronger tendency to wear irregularly. The prompt taking up of all wear greatly lengthens the life of bearings, and also of other parts in which strains may be set up or binding caused.

English automobile manufacturers are said to be figuring on the possibility of constructing a cheap and serviceable car equipped with a belt drive, believing that this method of power transmission can be developed and brought to a much more satisfactory state than it had reached some years ago, when the belt-driven car disappeared.

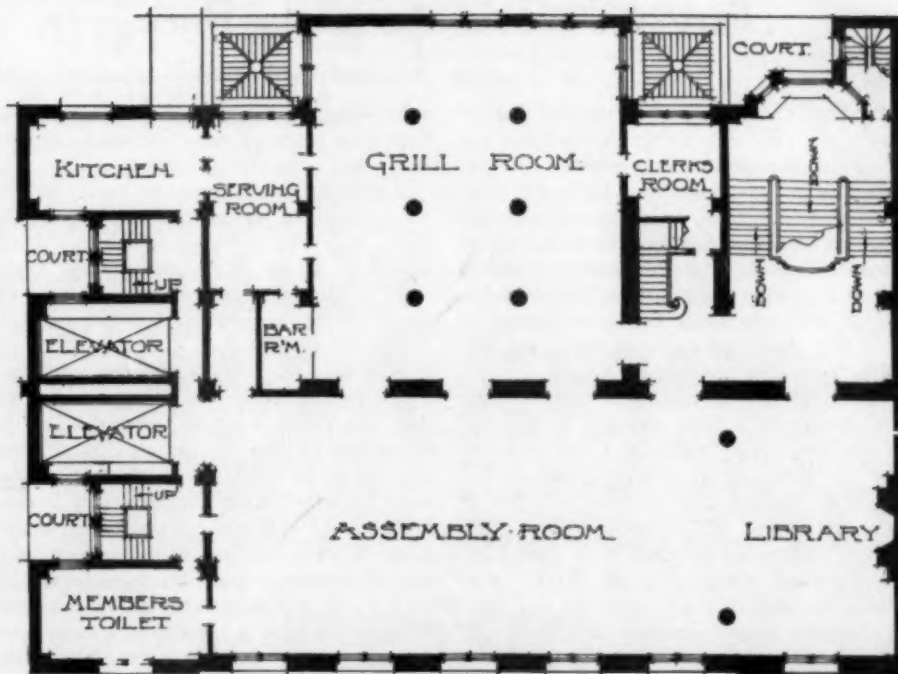
Foreign News Notes.

The Milan automobile salon was inaugurated on May 11 in the public gardens of the Italian city, in the presence of a large gathering of aristocracy and state officials. The show consists of 150 stands, all decorated with great taste, thirty of which are held by foreign firms. Seventeen French automobile constructors are represented, nine German and three American firms; namely, Olds, White and Winton. The Milan salon promises to be a great success, for automobilism has won the sympathies of the royal family of Italy and all the wealthy classes.

A sixty-two-mile competition for tri-cars—a class of vehicles which has not received much official recognition in France—is announced for an early date in June by the A. C. of France. The cars, which must carry two passengers weighing not less than 154 pounds each, and weigh when empty from 176 to 219 pounds, are expected to furnish a maximum speed of twenty-five miles an hour. Classification will be based on regularity of running and speed obtained in one kilometer on the level and the same distance on a hill.

For several months the touring committee of the Automobile Club of France has been at work on a model set of regulations, which shall be applied to all touring competitions run under the patronage of the club. The book has just been completed, and the result is a complete set of regulations which will do much to render touring events more satisfactory and their results more easy of comparison.

The inaugural meeting of the Sporting Academy was held recently at the headquarters of the A. C. of France. The new society consists of twenty gentlemen, all well-known in automobile and other sport-



PLAN OF FIRST FLOOR OF NEW HOME OF AUTOMOBILE CLUB OF AMERICA, NOW BUILDING ON 54th STREET, NEW YORK CITY—Front Elevation and Description were Published last week.

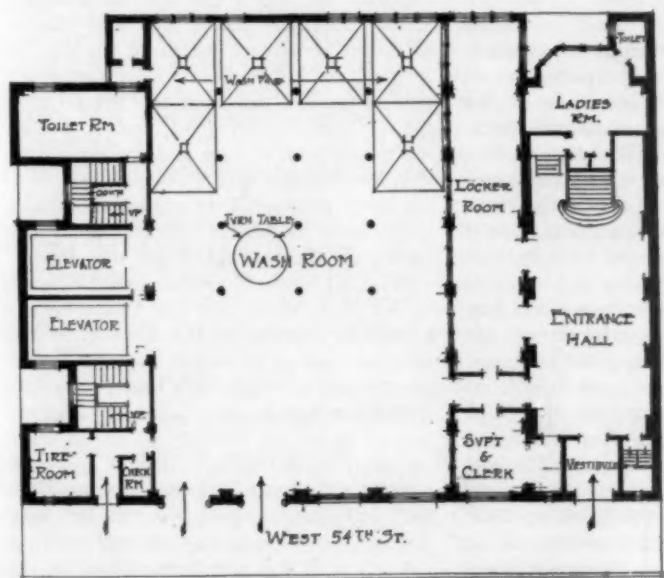
ing circles, who will elect twenty more eminent sportsmen, in order to bring their number up to the figure of "forty immortals" of the Académie de France, Academy of Science, Medicine, etc. As in these distinguished bodies, the Sporting Academy will form a sort of high-court of appeal in all sporting matters. Prince Pierre d'Arenberg was elected president, Paul Adam, vice-president, Pierre Lafitte, secretary, and Baron Henry de Rothschild, treasurer.

It being discovered that the machinery of the *Trèfle-à-Quatre*, the winner of the British International Motor Boat Cup, was

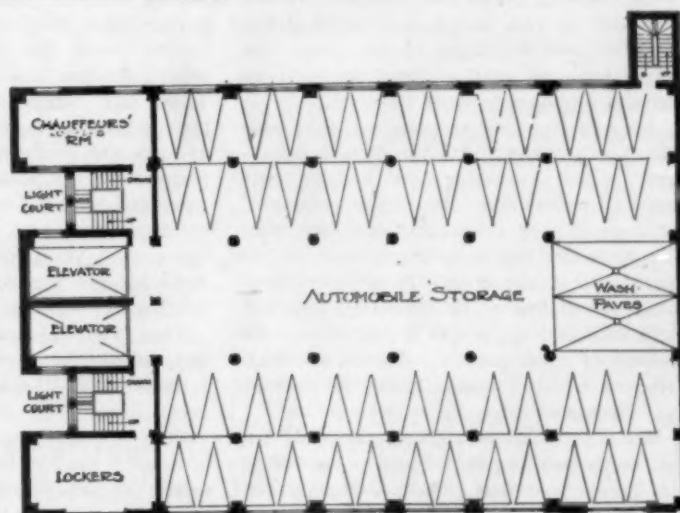
hardly damaged at all, at Monaco, where the hull was burned, a new hull is being built and the motor placed in it. Mr. Thubron hopes to be as successful with this new edition of his boat as he was with the original hull.

Automobiling in Italy is taking away from horse races the small vitality they once possessed, and now the turf events attract only a rapidly waning crowd.

The Cedar Rapids (Ia.) Automobile Club is planning an Orphans' Automobile Day.



PLAN OF GROUND, OR GARAGE, FLOOR OF A. C. A. CLUBHOUSE.



TYPICAL FLOOR PLAN OF UPPER STORIES, FOR CAR STORAGE.

Diary of the Transcontinental Race.*

By PERCY F. MEGARGEL.

OMAHA, May 24.—With the first half of our 4,000-mile race concluded and the cars still together, neither capable of running away from the other for more than half a day at a time, I feel that our chances for piloting *Old Steady* into Portland in first place are exceedingly good. Of course Huss feels the same about his car, and both of us are probably as keenly interested in the final result as we were when we left New York City together on May 8.

Our arrival in Omaha, both cars showing the effects of a hard struggle with mud, water and rough roads, was the occasion for the gathering of a large crowd of enthusiasts around the machines and for a broadside fire of interrogatories. The signs "Oldsmobile en route New York City to Portland, Oregon, \$1,000 Race," was dimly readable on the sides of the two cars underneath several coatings of Illinois and Iowa mud; the sunburned, bewhiskered,

self, although the fact that it is raining hard this morning does not encourage us up to any considerable extent.

Yesterday, when running into Omaha, we encountered for the first time a road machine at work on the Iowa roads. Road machines in the West differ from those used in the East; this machine, instead of being hauled by two or four horses, was drawn by no less than sixteen. What is true of road machines is also true of farming implements. In the West the farmer does not follow a single furrow plough to which one or two horses are attached, but sits on a big four to six furrow implement to which from four to eight horses are hitched. It is nothing new to see single fields of 100 acres, and they are often only one of numerous such fields comprised in an Iowa or Nebraska farm. A farm of 100 acres in the East is considered a large one.

Iowa seems to be a great horse and cattle

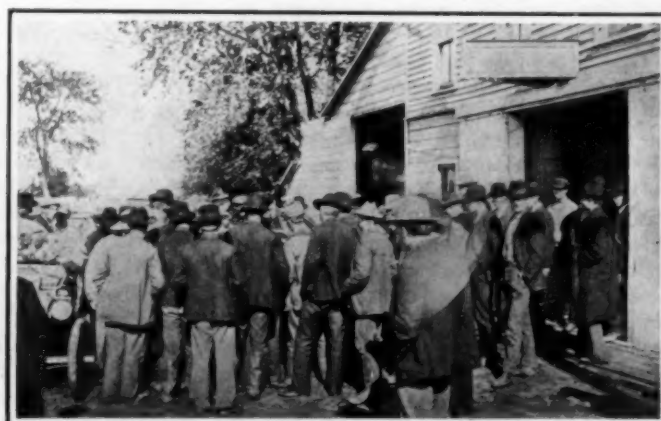
road we have to be extremely careful, as several have kicked most viciously at our car, and its occupants.

We laid over here in Omaha to-day to purchase such supplies as were deemed necessary for the second 2,000 miles of our tour. The cars were washed and the wiring gone over, arrangements were made with a laundry for a relay of clean clothing, maps were studied carefully again, and such information collected from those who have been over part of our trail as we thought would prove valuable in reaching our destination. According to all reports the roads should be good from Omaha to Cheyenne, and from that point to Boise City a trifle mountainous but fairly well settled and sprinkled occasionally with villages and towns. From Boise City to Salem, Oregon, civilization drops from sight and with the exception of an occasional ranch, we shall meet neither people nor living objects other than the wild animals that are supposed to roam at large over this territory.

Both crews have provided themselves with firearms, but should we encounter any



APPROACHING IOWA TOWN AFTER MILES AND MILES OF MUD.



RURALITES INTERVIEWING TRAVELERS DURING STOP FOR SUPPLIES.

weary looking crews that occupied the two cars did the rest, and it is doubtful if any transcontinental wagon outfit since the earliest forties, ever attracted as much attention on the streets of this city.

Reports from all sections are that both the North Platte and Little Big Horn rivers are on a rampage and that we must expect trouble. We have been expecting it, and getting it ever since we left New York, so this has little effect. Another report is that the snows from last winter have not melted on the mountain tops yet, and until they do, which is generally in the middle or latter part of June, the mountain streams which are usually dry in summer will be raging torrents.

Of course this is all very cheerful, and we enjoy listening to it, but it is not for us to look ahead for trouble. We run on serenely until we strike it, and then we use our resources in brains and muscles to get out of it. It will take something besides overflowing rivers and raging mountain streams to worry either Stanchfield or my-

raising country. Each farmer raises from twenty to a hundred horses a year and several times that many head of cattle, while pigs are too numerous to mention. There are hundreds—yes, thousands—of pigs on every farm, I believe. These droves of ham and pork chops occasionally block the road so that we are obliged to slacken speed and blow the horn for a long distance before we can get a clear road. The hogs are usually black or spotted, and almost every old sow is accompanied by a litter of from six to eighteen suckling pigs.

That ill feeling against automobilists that one encounters so frequently among the farmers in the East is lacking out here, and every farmer met with is your friend, no matter how badly you scare his horses or how much damage his nag does before you finally get past him on the road. There is no difference, however, in the nature of the horses. Some do not even prick up their ears at the approach of our machine, while others go through a series of rearing, kicking and bucking that would do credit to a wild west show. In passing horses on the

hostile foe, whether he be wild animal or bad man, the others will have to be able to shoot straighter than I can with the big 38 calibre revolver I purchased for the trip. I tried for half an hour to hit a telegraph pole across the road, but couldn't do it on the one box of cartridges I carried. I'm going to buy another box and try again some day, but shooting with a revolver was never my forte, although I do possess a National Guardsman medal for marksmanship won during the Spanish-American war days.

With all kinds of trouble possible before us we shall strike out for Cheyenne this afternoon, trusting in the same good luck that has carried us so far and that carried me through my 6,000-mile tour in the little *Pathfinder* last summer.

BETTER ROAD TO FREEMONT.

FREEMONT, Neb., May 25.—Leaving Omaha via Farnham street we ran ten miles over as fine macadam and gravel roads as one could ask for, and then struck the clay road leading to Elk Horn, the telephone wires being our guide.

* Continued from page 645, issue of May 25.

While at Omaha the writer made the acquaintance of a Mr. Skates—initials forgotten—who drove a Stevens-Duryea from San Francisco to Omaha last summer. He was accompanied by his wife on the trip, and New York City was his original destination, but his money ran out at Omaha, and, being unable to get credit from the factory, he gave up the attempt to reach New York. He gave us a very graphic description of the roads he traversed and told us we would find sand our worst enemy. A Mr. Frinkel, of Idaho, who stopped at our hotel, said that the mountain tops were still capped with snow, and would be until the first of July. In the meantime the mountain streams would be high and the water ice cold. Reports were still coming in when we left Omaha regarding the high water in both the Platte and Elk Horn rivers.

From Elk Horn we ran to Elk City, the bridge at Elk Horn having been washed out. We had figured on running from Elk City to Arlington, but when a farmer told us how he had lost his wagon and team of mules in an effort to get from Arlington to Freemont we changed our course and took the old military road from Elk City to Freemont. We saw every indication of high water, but encountered neither water nor mud, although the roads were rough.

We met a farmer at Elk Horn who was waiting for us; in fact, he had been waiting for us for several days. He owned a Ford touring car, had toured quite extensively, and was correspondingly full of advice, some of which was very good. We found an excellent hotel at Freemont, which is a little city of some 12,000 inhabitants.

(To be continued.)

LOUISVILLE CLUB PARADE.

Special Correspondence.

LOUISVILLE, KY., May 29.—Arrangements are being perfected by the Louisville Automobile Club for the annual automobile parade to be held June 10. Notices have been sent to all machine owners in the city, requesting them to prepare for the occasion. Last year there were upwards of 200 machines in line and it is expected the parade this year will be more than half as large again.

These parades have been found to greatly stimulate the interest in automobiling. The route will probably be from First street and Broadway, to Third avenue, and thence out the Boulevard to Jacob Park, a distance of about seven miles.

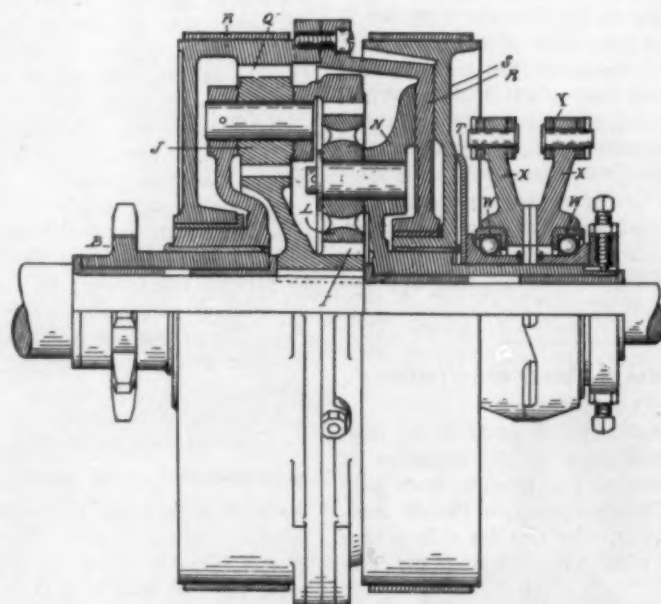
Orlando Jones, the Rolling Prairie blacksmith, is the proud possessor of an automobile. Yesterday he passed through this city en route to his home from Chicago, where he had purchased a Cleveland. He drove through and incidentally experienced some of the pleasures that fall to the lot of every automobilist—he had a puncture.—*Michigan City (Ind.) News.*

Patents

Planetary Transmission Gear.

No. 789,727.—N. T. Harrington, of Detroit, Mich.

In this device the clutch employed is much like that shown in the Brush patent, in the issue of May 6. It consists of two discs journaled loosely on the balls *W W* and having coating bevelled faces which spread the discs apart when one is rotated relatively to the other, as by tension applied to the arm *Y*. In this way the several members of the housing are forced together till they grip. The shaft is keyed to the double gear *H I*, meshing with planetary pinions *J* and *L* respectively. *J* is carried by *E*, which is keyed to the sprocket pinion *B* and also carries the internal gear *F*



HARRINGTON PLANETARY TRANSMISSION GEARING.

meshing with *L*. *L* is carried by *N*, to which the drum *S* is keyed at its hub. The drum *R R*, in two parts, encloses the pinions and carries an internal gear *Q*, meshing with *J*. When the friction band on *R* is tightened, the slow, forward motion is imparted to *E* and *B* through *H* and *J*. When that band is released and the one on *S* is tightened, thus locking *N*, the reverse motion is obtained through *I*, *L*, and *F*. The elastic plate *T* transmits the pressure from the clutch members to lock *S*, *R*, and *N* together for the direct drive.

Driving Gear for Motor Trucks.

No. 788,840.—A. F. Madden, of Newark, New Jersey, and A. J. Doty, of Mount Vernon, New York.

This is a slight modification of the large driven spur gear with internal brake drum attached to the rear wheels of motor trucks and similar vehicles. The modification con-

sists in having the spur gear formed separately from the brake drum so that it may readily be renewed. The brake drum is attached to the wheel hub by a spider cast integral with it.

Motorcycle Control.*

No. 789,080.—A. Levedahl and R. A. Norling, of Aurora, Ill.

A special arrangement of the handlebar control devices for acting on the spark lead and exhaust valve lifter of a motorcycle.

Steam Engine and Valve Gear.

Nos. 787,580 and 787,581.—A. Loomis, of Jackson, Mich.

The first of these has to do with a link motion for actuating the valves from the crossheads of the engine. It is quite novel and impossible to describe or illustrate in small compass, but it is claimed by the in-

ventor to have fewer wearing points than the Stephenson or Gooch valve gears.

The second patent has to do with the arrangement of the engine and its support in the frame.

George Ade, who used to write fables, but who now writes comic operas and plays, is an enthusiastic autoist, says the *Pittsburg Dispatch*, and he claims to have "burnt up" about all the roads in Indiana in his "Rolling Peanut," as he christened his Oldsmobile runabout when he bought it.

"The machine is all right," he recently told a friend, "but it should have an attachment that might be known as the Ladies' Auxiliary. This device, which I will patent if I ever complete its mechanism, is intended to come into use when an auto meets a horse driven by an hysterical woman. The Ladies' Auxiliary will step ahead of the auto, blindfold the horse, plug its ears, and then chloroform the lady."

Letter Box

Spark Coils and Drive Systems.

Editor THE AUTOMOBILE:

[208]—Will you kindly answer the following questions: For a double cylinder motor would a single or double spark coil be preferable?

For one living so far from manufacturers as I do, would shaft or chain drive give the best results as regards breakdowns and economy on a car weighing 1,500 pounds?

H. F. C.

Chinook, Montana.

Both single and double coil systems, when properly made and installed, give excellent results, and it is impossible to say that one is any better than the other.

With regard to the drive for your car, it may be said that while a chain drive is more liable to breakage than a shaft drive, it is also much more easily repaired. A shaft drive very rarely breaks down under ordinary circumstances; but if it *does* let go it is likely to be something more serious than a job of roadside tinkering. A well-made shaft drive is very satisfactory on a light car, and this form of power transmission seems to be growing in popularity.

Differences of Theory and Practice.

Editor THE AUTOMOBILE:

[209]—An interesting study of the most favorable conditions for the operation of explosion motors has recently been published by Charles Faroux, a French automobile engineer, who was for a long time an engineer in an American street car company.

One of the striking facts met with in the study of explosion motors is that there is a very wide difference between their theoretical and their practical efficiency, the difference often being as much as from the unit to the double—a variation which is not to be found in any other prime mover. These variations arise from the hypotheses used in figuring theoretical efficiency. The following are the hypotheses:

- (A) The expansion of ignited gases will be instantaneous and at constant volume.
- (B) The pressure of the exhaust gases will be inappreciably above atmosphere.
- (C) There will be no heat losses, through cylinder walls or otherwise.
- (D) Combustion will be complete.
- (E) Back pressure during inlet and exhaust strokes will be but inappreciably above atmosphere.
- (A) It is quite certain that the expansion of the ignited mixture is not instantaneous, the speed of combustion having an appreciable value, amounting to several meters

per second, the exact rate depending upon the condition of the mixture. Efficiency increases with the temperature and maximum pressure, but the latter is decreased since the explosion does not take place at constant volume; consequently temperature and efficiency are affected at the same time.

(B) The second supposition, that the gases escape at or but little above atmospheric pressure is proved erroneous by every-day experience, and the evidence of the eye is sufficient to show the falsity of such a theory. As the compression takes place in the cylinder itself, the efficiency is reduced to a much lower figure than assumed theoretically. Common sense is sufficient to convince anyone that the exhaust pressure will be much above atmosphere, and in high-speed work, when the motors are driven to the maximum speed, there is reason to believe the exhaust will take place at a pressure of five times atmospheric pressure, if not more. Under such conditions the strain on the parts of the engine is, of course, very great.

(C) In the third instance, the fact is that there are great heat losses, and the cylinder walls play an important part in carrying away heat and consequently in reducing theoretical efficiency. The cooling water jacket, or, in the case of an air-cooled cylinder, the radiating flanges, provide a means for carrying away heat enough to prevent the burning of the lubricating oil without which the machine could not run. The proportion of heat so carried off is often more than fifty per cent of the whole.

Experiments conducted by Mallard and Le Chatelier have shown that this heat loss is proportional to the quantity $\frac{V}{S}$, S being the wall surface and V the volume of the mixture. Since S increases as the square of the cylinder dimensions and V as the cube, the loss will be greater as the bore and stroke become greater. In this point, as well as many others, high compression engines have advantages, since for an equal weight of mixture $\frac{V}{S}$ is smaller.

Experiments conducted by Aime Witz have shown that the higher the temperature of the cylinder walls, the higher the efficiency of the motor. This is accounted for by the fact that these exchanges of temperature are, in proportion to the difference between the temperature of the walls and the temperature of the gases. Thus the action of the jacket or cooling flanges is unfavorable to the attainment of the highest efficiency; but unfortunately it is a necessary evil.

(D) With regard to the supposition that combustion is complete, Mr. Witz has proved that fifteen per cent or more of the gases is frequently unburnt, this, of course, causing a loss of efficiency. No argument is necessary to prove this.

(E) As to the losses through back pressure during the aspiration and exhaust strokes, it may be said that these are due

to mechanical imperfections which, though to some extent unavoidable, have lost much of their importance in modern motors.

There remains one source of loss to be pointed out. The compression takes place in a dead space, which after the exhaust stroke remains filled with burned gases which dilute the fresh charge, thus decreasing the value of the mixture, especially near the point where ignition takes place. This fact impelled Griffin to add two strokes to his motor, one for the aspiration of cold air and the second for its expulsion, thus scavenging the cylinder thoroughly. The thermal efficiency of the six-cycle motor thus constructed was very good. P. R.

New York.

Overheating of Cylinder.

Editor THE AUTOMOBILE:

[210]—Being a subscribed to your publication, I would ask for some information with regard to the overheating of my four-cylinder motor. Ever since I put in a new cylinder and piston the water has boiled so badly that it forces its way out not only through the overflow, but under the filling cap when the latter is screwed down tight. What are the probable causes, and how can the trouble be remedied?

A. F.

Brooklyn, N. Y.

If the water boils now, but did not before the new cylinder and piston were put in, it is plain that the addition of the new parts has in some way interfered with the circulation. Broadly speaking, there are two causes for the boiling of the water; either the pump is not doing its full duty or there is an obstruction somewhere in the circulating system. Examine the pump carefully to see if it is working properly. If it is, go over your water piping and look for obstructions. It is very likely that something has dropped into the jackets or pipes while connections were being made. It is also possible, though not so likely, that the water jacket on the new cylinder is a faulty casting, and obstructs the flow of the water. If the circulation was satisfactory once, it can be made satisfactory again by removing the cause of the trouble. However, it is barely possible that the new piston may be too tight a fit in its cylinder, on account of expansion due to the working temperature. If the piston binds it will create considerable friction and will result in heating up the cylinder and piston excessively.

Persons unaccustomed to automobilng are usually surprised, on taking their first ride, to find how much cooler the weather seems to grow after the car has run a few miles at fair speed. On a comfortably warm day a person riding in an automobile will frequently feel the need of an extra outer garment of some sort.

An ordinance now in effect in Durham, N. C., restricts the speed of bicycles, motorcycles and automobiles.

NEBRASKA LICENSE AND SPEED LAW.

Although Containing the Customary Licensing Provisions, Speed Limits, and Requirements, It is Notably Brief and Clear—Makers and Dealers Not Exempt from Registration.

On July 1 there will go into effect in Nebraska a state automobile law that, while containing nearly all the features of the similar laws of the eastern states, is a model of fairness, simplicity and lucidity. It is pleasingly free from the constant reiteration that usually makes these documents so wearisome to read, yet is perfectly clear and explicit. It was introduced by Mr. Hand and passed by the last legislature under the title "House Roll No. 146."

The new law begins by defining "motor vehicles" as "all vehicles propelled by any power other than muscular power, excepting such motor vehicles as run only upon rails or tracks," and designating "closely built up portions" as "the territory of a city, town or village, contiguous to a public highway devoted to business or where for not less than one-fourth ($\frac{1}{4}$) of a mile the dwelling houses on such highways average not more than one hundred (100) feet apart."

Every resident in Nebraska who owns or acquires an automobile must file a statement with the Secretary of State, for every car he owns, giving a brief description of the vehicle and his own name and address, upon a blank furnished by the secretary. The filing fee is \$1. Any person hereafter who buys a car that has been registered under this act must file the usual statement, but setting forth also the fact of its previous registration, which must be cancelled by the secretary, who, however, may assign to the new owner the former registration number.

Upon receipt of a statement accompanied by the required fee the secretary must, without other fee, register the machine and assign it a number in consecutive order and give the owner a seal of aluminum or other suitable metal, circular in form, not over two inches in diameter and stamped with the registration number. This seal must be displayed conspicuously at all times on the automobile.

In addition to this seal the owner of the car must display on the rear of the automobile the registered number, so as to be plainly visible, in Arabic numerals each not less than three inches in height, and each stroke not less than half an inch wide. The number must be accompanied by "the initial and terminal letters of the state's name," not less than two inches high.

Non-residents are not required to register if they have complied with any law requiring the registration of owners in any other state, territory or federal district, and the registration number and initials of the state, territory or federal district are dis-

played as required in the Nebraska law.

Speed outside of cities, towns and villages is limited to twenty miles an hour; in the closely-built up parts of such communities to one mile in six minutes (ten miles an hour), and elsewhere in cities, towns and villages to one mile in four minutes (fifteen miles an hour); but in all cases a car must not be operated at a greater speed "than is reasonable and proper, having regard to traffic and use of the highway, or so as to endanger the life or limb of any person." When approaching intersections of public roads, bridges, sharp curves and steep descents, the driver must have his car under control and operate it "at a rate of speed less than heretofore specified."

Upon request or signal by putting up the hand, of a person riding or driving a restive horse or other draught or domestic animal, the operator of an automobile must bring his car immediately to a stop, and, if traveling in the opposite direction, remain stationary "so long as may be reasonable to allow such horse or animals to pass, and, if traveling in the same direction, use reasonable caution in passing." The operator or occupant of an automobile is required to render necessary assistance in passing persons with horses.

Good and sufficient brakes, a bell, horn or other signal and, during the period from one hour after sunset to one hour before sunrise, one or more lamps showing white lights visible a reasonable distance from in front and also a red light visible from the rear, are obligatory.

Cities and towns are expressly prohibited from passing or enforcing any ordinance or regulation requiring any other license or permit to use the highway than the state license, and from excluding from the free use of the highway any person who has registered his car with the Secretary of State. All such local ordinances are annulled by the new state law. It is stipulated, however, that the new law shall not be construed as limiting the power of local authorities to make and enforce regulations affecting automobiles that are offered for public hire.

It may be an unfortunate oversight that there is nothing in the new law exempting manufacturers and dealers from the requirement to register every car owned by them in the state, whether they use them on the public roads or not.

Violation of any of the provisions of the law constitutes a misdemeanor punishable by a fine not exceeding \$25 for the first offence, and a fine of not less than \$25 nor more than \$50 or imprisonment not exceeding thirty days for the second or any subsequent offence.

SOUTH DAKOTA LAW.

The first automobile law in South Dakota was passed this spring in the ninth session of the legislative assembly. It is a verbatim copy of the Nebraska law, published in this issue,

and requires the registration of cars, the carrying of license seals and number tags, and limits speed in cities and built-up portions of villages to one mile in six minutes (ten miles an hour), and in the open country to twenty miles an hour. This law goes into effect June 1.

ILLINOIS BILL KILLED

Governor Deneen has killed the bill providing for state regulation of automobiles in Illinois.

This measure was originally introduced in the senate, fostered by the Chicago Automobile Club, and after a long and hard fight finally passed both branches of the legislature, and was then passed to the governor for his approval. After waiting until the last moment allowed under the law, he vetoed the bill, setting forth in his endorsement the belief that if it was made a law "its provisions were such as to bring it almost, if not entirely, within the condemnation of the provisions of the constitution forbidding class legislation," and further that it would allow racing of automobiles on the public highways under certain regulations, as a rate of twenty miles an hour would be allowed in the open country.

Climbing Dead Horse Hill.

(Continued from page 669).

F. E. Frost; Assistants, H. P. Bagley, O. M. Savels; Umpires, George B. Cutting, W. B. Clark, Carl H. Paige, Ira P. Smith;



ELLIOT C. LEE, PRESIDENT A. A. A., REFEREE WORCESTER HILL-CLIMBING TEST.

Scorer, James Murphy; Checkers, H. C. Goulding, William A. Chaffin, J. C. Bushong.

On Thursday night a banquet was tendered the participants and guests by the Worcester Automobile Club in the Bay State House, which is also the club headquarters. Various city officials who had been invited expressed their interest in the day's sport, which had been an object lesson to them in the expert handling of the automobile.



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Regarding the Gordon Bennett Race.

From a mechanical standpoint the Gordon Bennett elimination trials in France, which take place June 16, will have about as much interest as the great classic event on July 5. Although all the cars entered follow the accepted motor-in-front construction there are radical differences in the carrying out of the design. Details of the constructions are contained in our leading article this week, which includes a very complete description of the most novel of the cars—the C. G. V. entry. In this car the utilization of the rear end of the frame for the direct support of the rear axle is a novelty that recalls locomotive construction, and its success on the road would no doubt have an influence on future design. It is noticeable that some of the new features in the French cars have a striking similarity to American construction—witness the rear axle spring suspension on the C. G. V. car and the carrying of weight low down in the Renault racer. The former method closely resembles the side spring suspension seen on many American cars, of which the Knox is a notable example in the larger machines. And the feature of the Renault construction recalls the Winton racer built for the 1903 Gordon Bennett race in Ireland. In that race the ease with which the Winton car took the turns at high speed was much commented upon abroad, and evidently the idea took root there, as it has here in other notable racing machines of later date.

Reports from the course in France all agree that it is a dangerous one and that it will be really more a test of brakes and tires than of high speed. It does not necessarily follow, however, that the cars of the largest power will be at a disadvantage thereby, for they will be able to pick up rapidly after a slow down for a turn and as the turns are many the saving of minutes or seconds in this way will count in the total mileage.

The more difficult the course the greater the need for a driver's acquaintance with its peculiarities and in this respect the drivers other than French will be at a disadvantage. Our correspondent writes that racing cars, and probably touring cars, will be barred from the course from June 2. We assume that this means until after the elimination trials only, for if it means from June 2 until the day of the race itself then the chances of any foreign driver winning the race will be very slim indeed. Some of the French drivers have been over the course in their racing machines more than a score of times already.

It is sincerely to be hoped that the French authorities will take a sportsman's view of the case and give the foreign drivers an opportunity for a little practice, at least, before the day of the race.

Show Question Settled in New York.

Apparently no better solution of the overcrowded Madison Square Show problem in New York could have been found than that which has been reached from a totally different cause. When the licensed association stepped quietly in and leased the Madison Square Garden several months ago many feared that the situation had become seriously complicated and that a multiplicity of weak shows would be the result.

Now the situation is cleared and all domestic and foreign gasoline machines that bear the licensed association's tag will be seen at the regular Garden show, while in a neighboring armory all the unlicensed machines will be on view—probably at one and the same time. Builders of steam machines and of electric machines will be free to exhibit at either show, if not both, as their output does not come under the purview of the licensed association.

The armory show will be under the auspices of the Automobile Club of America, which is a guarantee that it will be a representative and well conducted exhibition. The Madison Square Garden show will be conducted on a business basis in that the exhibitors will themselves share in the profits, and this will unquestionably stimulate them to greater efforts to make the show attractive. And in the case of the armory show the Automobile Club of America intends to develop the historical and educational side of the exhibition. The friendly rivalry of the respective show promoters will have the effect of raising the artistic standard, at

least to the level of the late Importers' Salon in New York. Nothing less will be creditable in either case, and each has the possibility of doing better than the excellent beginning then made.

It is certainly a cause for thankfulness that the dirty, ill smelling, overcrowded and inartistic conditions of the Garden shows are at an end. In surroundings more appropriate to its engineering importance and artistic excellence the automobile will be presented to the public view in New York next year.

Racing Season in Full Swing.

Although there have been a few scattering race meets in different sections of the country already this spring, the real racing season opens in full blast this year, as usual, on Decoration or Memorial Day—May 30—with important automobile race meets on Tuesday this week in New York, Boston, Chicago and Denver, a motorcycle hill climbing contest in New York and auto-boat races on the waters of Manhasset Bay, Long Island. Pittsburg was to have a hill-climbing contest following similar events in Springfield, Cincinnati and Worcester, but this has been indefinitely postponed.

From the present time until the Vanderbilt Cup race in the fall every week is to have its sporting event in some part of the Northern States, the principal meets forming part of the racing circuit arranged by the American Automobile Association racing board and including the most important cities from Boston to Chicago.

It is evident that interest in track racing as well as in hill-climbing contests and road races is increasing throughout the country, rather than diminishing, and it is to be hoped sincerely that the conduct of the meetings of this season will be of a character to insure the continued attendance of the public and the maintenance of the contests on a high plane of sportsmanship.

Important New Law in Effect.

Governor Stokes signed the new automobile bill passed by the last New Jersey legislature last Friday at noon, having been urged to do so by representatives of the agricultural interests, as well as others, according to a statement by his private secretary. The new law goes into effect on June 1. It is thought that a year's trial of the law will demonstrate its merits or demerits and that if it does not prove to be better than the old measure the next legislature can remedy its defects.

The full text of the measure was published in THE AUTOMOBILE for April 8. It requires the usual registration and licensing of cars with the Secretary of State at a fee of \$1 and the carrying of number tags on both front and rear of the car. No other number save the New Jersey license number may be carried in sight on the car if the figures are of a similar size or nature.

One of the most important features of the law as compared with the old law is that while the speed limit is still fixed at twenty miles an hour in the open country, no lesser speed limit is fixed for cities and villages, except by the clause "nothing in this section contained shall permit any person to drive a motor vehicle at any speed greater than is reasonable, having regard to the traffic and use of the highways, or so as to endanger the life or limb or to injure the property of any person."

Another important change from the old law, which was so phrased as to give policemen and constables the right to arrest offenders only upon warrants properly secured before a magistrate, is contained in section 11, which authorizes any constable or police officer to arrest without warrant any person driving an automobile in a race or on a wager on the public highway, or to make a speed record exceeding twenty miles an hour, or who passes a person riding or driving a horse at a greater rate than twenty miles an hour, or who is driving anywhere on the road faster than thirty miles an hour. Constables and police officers are also authorized to arrest without warrant any person violating any of the provisions of the act who refuses to give his name and address and the registered number of his car, provided that upon request the officer shows his official badge or written evidence of his appointment and authority.

MILWAUKEE'S TWO-DAY MEET.

Largest Local Event for June 2-3—Prominent Drivers Entered.

Special Correspondence.

MILWAUKEE, May 26.—The list of events for the race meet to be held here at the State Fair Grounds on June 2 and 3 were partially announced after the meeting held at the Republican House Wednesday evening. There will be two ten-mile races for professional drivers for a purse of \$500, one of which will be run on Friday afternoon and the other Saturday afternoon. In addition to these there will be five other events of from two to five miles for amateurs, for which trophies have been donated by Milwaukee dealers.

On Thursday night an illuminated automobile parade will be held, and Mayor Rose will be invited to ride with Barney Oldfield and lead the procession.

The list of entries contains a number of well-known professional and amateur drivers, including Barney Oldfield, Earl Kiser, Dan Canary, Walter Christie, Col. E. H. R. Green, C. E. Soules, Jack Fry and Dr. H. E. Thomas. A number of local automobilists have entered for the different events, but their names have not yet been announced.

"I'm house-hunting to-day," he said with a groan.

"Why, I thought you owned a house?"

"Once upon a time—yes; but Laura had to be in style; so we sold the house, and the piano, and the horse, and the ponyphaeton, and the library, and the gas stove, to purchase an automobile. Here she comes now—God bless her!—Git out o' the way."

—Atlanta Constitution.

Plans for New York Shows in 1906.

The Madison Square Garden automobile show for 1906, which will be held during the week of January 13-20, inclusive, under the auspices of the Association of Licensed Automobile Manufacturers, will be open only to manufacturers of gasoline cars who are members of the licensed association, and to manufacturers of steam and electric cars, the latter classes not being covered by the patents controlled by the association.

The exhibits will be divided into classes; the main floor of the Garden will be given to gasoline and steam pleasure cars, including imported machines; a large space, about one-fifth of the main floor will be allotted to the importers, who will make their own subdivisions. Electric pleasure cars exclusively will be exhibited in the restaurant, and commercial vehicles will be placed in the basement. Parts and accessories will be shown in the concert hall and the first balcony, the exhibitors in this class dividing the space among themselves, as in former years. Decorations will be arranged by the association, so that there will be a uniform color scheme throughout; the association will arrange for carpeting, railings and signs, as well as the purely decorative effects. There will be no aisle in the center of the main floor, but instead there will be two rows of exhibition spaces; the aisles at the sides will be fifteen feet wide, allowing ample space for the movement of the crowds. Arrangements will be made for Garden employees to keep the machines clean, thus lightening the work of the exhibitors. An important decision is that the profits of the show will be divided among

the exhibitors according to the spaces held and the prices paid for them.

These arrangements were made at a two days' session of the A. L. A. M. held in New York on May 24 and 25. The advisory committee on show matters consists of George Pope, Marcus I. Brock and C. R. Mabley.

The sixth annual automobile show of the Automobile Club of America will be held during the same month as the A. L. A. M. show, possibly during the same week; the exact date has not been announced; the place selected is the armory of the Sixty-ninth Regiment on Lexington avenue, Twenty-fifth and Twenty-sixth streets, New York. This building is now in course of erection, and will be finished late in the present year; the automobile show will probably be the first opportunity the public will have to view the new armory, which, it is said, will be one of the finest exhibition halls in the country. This show will be open to all who desire to exhibit. The American Motor Car Manufacturers' Association, an organization which includes in its membership many of the manufacturers who are not members of the A. L. A. M., has arranged to exhibit at the Automobile Club's show, and it is probable that "unlicensed" imported cars will be shown there. Among the interesting exhibits at this show will be a collection of special cars gathered from all over the world, including famous racing machines, military cars, cars for other special purposes and historic machines. This exhibit will be made by the Automobile Club of America.

MANY SPRINGFIELD ARRESTS.

Attorneys Retained and Cases Will Be Fought to Finish.

Special Correspondence.

SPRINGFIELD, MASS., May 26.—Twenty-five local automobilists, including city officials, business and professional men, have been summoned to appear in police court Monday morning to answer to charges of exceeding the legal speed. A meeting of those interested was held to-night in the headquarters of the Springfield Automobile Club, when it was decided to enter pleas of not guilty to the charge. Each of the twenty-two present subscribed \$5 to a fund to fight the cases and Attorneys James D. Carroll and D. E. Leary were retained to fight the cases to a finish.

This round up of alleged speed violators is the result of a campaign put into operation by City Marshal George M. Stebbins, who is himself an honorary member of the Springfield Automobile Club. Numerous complaints led to the detailing of two patrolmen to take tabs on motorists over a measured course in State street where violations have been most flagrant. Some forty complaints resulted, but it was thought best to press but one case against each, there being several who have offended more than once.

Those summoned include Supt. of Streets A. A. Adams, who operates a car bought

by the city for the use of his department, and Park Supt. Chas. E. Ladd, Stanford L. Haynes, of Haynes & Co., and Lieut. F. H. Phipps, Jr., son of Col. F. H. Phipps, commandant of the United States Armory; T. M. Granger, A. A. Geisel, J. Fletcher, M. J. Kelly, A. W. Nason, H. Chapin, C. D. Kingsbury, O. S. Springer, C. B. Barker, H. French, C. H. McKnight, C. McCulloch, A. D. Moore, M. Barker, G. C. Baines, C. S. Frost, F. W. Potter and F. E. Holzapfel.

City Marshal Stebbins states that it is not the intention of the department to be in the least inimical to the welfare of the automobilists, and that all leeway in keeping with public safety has been allowed. The complaints are not issued for small infractions of the law, but owing to evident danger to pedestrians at crosswalks in State street.

The summonses were by many received in a jocular spirit, but the intention is unanimous to not submit without a struggle. A special meeting of the directors of the club has been called and it is probable that the organization will make it a club affair and give backing to secure a victory.

"Why," asked the Cheerful Idiot, "is acetylene gas like a merciful judge?"

Again silence, save for the large boarder drinking coffee through his mustache.

"Because," babbled the Idiot, "it mostly always makes a fine light. Ha, ha, ha!"—Baltimore American.

FIFTH ANNUAL GOOD ROADS CONVENTION.

Will Be Held in Portland, Oregon, June 21-24—All Interests United in Movement—Special Transcontinental Demonstration Tour—National and State Governments Represented.

The first great national convention to assemble on the Pacific Coast will be the Fifth Annual Convention of the National Good Roads Association, which will be held in the auditorium of the Lewis and Clark Centennial Exposition at Portland, Oregon, June 21-24.

The subject of public road improvement is receiving more active and practical consideration just now than ever before in the history of the country, and, in fact, more than any other question of internal improvement in the United States. Agricultural, industrial, transportation, religious, educational, social and public interests have united in an effort to secure a uniform system of permanent highways commensurate with the country's needs.

Governors of the several states and territories, municipal executives, road commissioners, heads of commercial, agricultural, industrial and other organizations, will name delegates to represent their respective interests in the convention, and, in addition, members of Congress and state legislators will be ex-officio members of the convention.

President W. H. Moore, of the National Association, is now making a transcontinental tour by special train, carrying representatives of the National and State governments, the press, engineers and experts. The train left Chicago on May 25, and stops will be made at important points en route in the interest of the movement, and is being scheduled so that it will arrive at Portland in time for the opening of the convention.

The proceedings of the convention will include addresses by prominent authorities, and discussions, on the subject and its relation to the industrial progress and development of the country. Modern methods of road building will be exemplified by engineers and expert road builders. Road legislation, particularly with regard to National and State co-operation and supervision, will be given consideration. An object lesson road will be constructed on the exposition grounds, showing in detail the process of building from the foundation grade to the finished road, demonstrating the application and use of the many kinds of road material and the operation of improved road-making machinery.

It is particularly fortunate that the convention should be held on the Coast at this time, for, in addition to the interest in the convention itself, an opportunity is afforded persons living in the East, South and Middle West to visit the Pacific Northwest at the most delightful season of the year, and the attendance should be unprecedented in the history of good roads conventions.

Saturday, June 24, has been designated as Good Roads' Day, and will be observed with elaborate though appropriate exercises. The "Rose City" has extended a cordial welcome to her guests on this occasion.

PLANNING AUTO MAIL SERVICE.

Special Correspondence.

SPRINGFIELD, MASS., May 27.—The New Yorkers summering at Lenox, Mass., have petitioned the postal authorities for the establishment of an automobile mail service between Lenox and Hudson, N. Y., on Sundays from June to November. The

New England officials at Boston have approved the plan and the application has been forwarded to Washington for action.

It is planned to have an automobile connect with the 6 A. M. train at Hudson and deliver the mails at Lenox at 8 o'clock, covering the distance between the two points—32 miles—in two hours, and thus enabling the residents to receive their mail several hours earlier than under present arrangements. T. S. Morse, of Lenox, will assume the contract for the operation of the service. The total cost of maintaining this line is estimated at \$350, which it is understood will be borne by the cottagers and a New York newsdealer.

JERSEY COAST DRIVEWAY.

Short Stretch to Be Built Completing Jersey City-Atlantic City Route.

Special Correspondence.

ASBURY PARK, N. J., May 29.—At the meeting of the Monmouth County Board of Chosen Freeholders a few days ago, the contract for the construction of a stone road from Matawan to the Middlesex county line was awarded. The stretch to be built is almost a mile long, and when it is finished, there will be a continuous and excellent road from Jersey City to Atlantic City, for which automobilists have long been working.

The State Road Commissioner recently threatened to withdraw state aid unless Monmouth county took better care of her stone roads, and as a result many of the principal roads will be resurfaced this summer. For the past ten years roads in Monmouth county have been famous, and have induced thousands of people to locate permanently at some of the resorts, especially automobilists.

Year by year the drive along the coast from Jersey City to Atlantic City is growing in popularity with automobilists. From Jersey City to Red Bank the best route to follow is the road which leads through Newark—the Plank Road or the turnpike—and Elizabeth—Frelinghuysen avenue, taking the Middlesex and Essex turnpike at Elizabeth to Rahway, Menlo Park, Metuchen and New Brunswick. From here it is a short run to Hardenberg Corners and Old Bridge. At Old Bridge, nine miles from New Brunswick, cross the railroad tracks and South river to the macadam road leading into Matawan, five miles distant. At Matawan a turn to the left should be made. This will lead along the Freehold turnpike to Keyport, two miles further on. Main street in Keyport should be followed to the Middletown road, which leads into the old-time hamlet bearing that name. The turnpike is hilly and winding, but is hard and fine.

The next place of any importance is Red Bank, to which place the road is plainly marked. From Red Bank there are three roads leading to the shore. One, the Red Bank road, skirts the south shore of the Shrewsbury river, passing through Fair Haven and Oceanic, and turns slightly to the right when near the ocean, joining Rumson road. Rumson road can also be followed all the way from Red Bank, passing through Little Silver, and is the favorite with many as it leads by some of the most handsome homes in New Jersey.

Another route is through Shrewsbury and Eatontown, past the deserted Monmouth race track into Long Branch, from which point the ocean boulevard leads through West End and Hollywood, Elberon, Deal, Allenhurst, Asbury Park, the road stopping at Wesley Lake, and being continued at Belmar. The gap is passed by going west

to the main street of Asbury Park which may be followed all the way to Belmar, where the ocean drive is taken up again.

At Point Pleasant, where the boulevard ends, the tourist will do well to leave the coast, with its life and gaiety and strike inland towards Lakewood. The road leads through the woods, beautiful in their loneliness, then through the pines to Toms River. On a road as hard and as level as a table one can roll all the way into Forked River, and the road from that place to Tuckerton is one of the best in the country. It was finished only recently, is sixty feet wide, and composed of hard gravel which is cemented naturally by Ocean county yellow clay.

On the way to Tuckerton one passes through Waretown, Barnegat, Manahawkin, Cedar Run, Staffordville and Parkertown. Then the road turns westward to New Gretna, then south through Port Republic, Absecon and Pleasantville. From the latter point it is a six-mile run into Atlantic City, over a good, firm road.

PRESIDENT TAKES TO AUTO

Experiences Much Delight in Fast Ride Over Conduit Road.

Special Correspondence.

WASHINGTON, D. C., May 28.—An event of more than ordinary importance to the automobile world was the automobile ride recently taken by President Roosevelt, being the first auto ride in Washington he has taken since his elevation to the Presidency. Various members of the President's family have frequently been seen on the streets of Washington in automobiles, Miss Alice Roosevelt being particularly fond of the sport, although she does not own a car. Evidently their talk of the delights of automobiling fired the President with a desire to experience the same delights, and he expressed a wish to be "shown." Louis Ruprecht, manager of the Washington Electric Vehicle Transportation Co., promptly volunteered to take the President on a ride, and the afternoon of May 20 was selected.

At the appointed hour Manager Ruprecht drove a 40-horsepower Columbia gasoline car to the White House and met the Presidential party, consisting of the President, Assistant Secretary Murray, of the Department of Commerce and Labor, and Professor Hale, tutor to the President's boys. The President signified a desire to ride on the front seat, and throughout the ride he engaged in conversation with Mr. Ruprecht in an endeavor to get all the fine points on the operation of the car.

Leaving the White House, the party proceeded through Georgetown and out the Conduit road to Great Falls. A moderate rate of speed was maintained nearly all the way, but on a level stretch just beyond Cabin John Bridge, Ruprecht drove for several miles at a high rate of speed. Near Great Falls the President left the car and was ferried across the river into Virginia, and was soon lost to view in the dense woods along the river bank. Proceeding at a rapid gait, he walked the entire distance from Great Falls to Chain Bridge—15 miles—and then re-entered the car and was brought back to the White House.

President Roosevelt was bubbling over with enthusiasm when he returned, and several times he expressed to Manager Ruprecht the great enjoyment the ride had given him. An amusing incident was the action of a policeman in putting his hand over the lens of a camera just as a photographer was preparing to snap the party

as it emerged from the White House. The photographer was exceedingly wroth, but before he could get in position again the party was two squares away and a picture was then impossible.

ST. LOUIS LAW AMENDED.

Chauffeurs to Be Licensed—Speed Limit Raised to Ten Miles.

Special Correspondence.

ST. LOUIS, May 26.—At the last meeting of the House of Delegates, Speaker Meehan introduced a bill providing for the licensing of chauffeurs by the city and a readjustment of the speed regulations.

"Automobile scorchers should be punished most severely," declares Mayor Wells—himself an automobile owner. "Some means must be found to stop this reckless running through the streets and parks. I believe, however," he said, with a twinkle in his eye, "that the speed limit should be increased. I must admit that the speed now allowed is very slow—only six miles an hour. I suppose I myself have violated the ordinance, as that speed is merely a fast walk.

"I do not wish to make any suggestions as to a reasonable limit," the Mayor continued, "as I think the action on this matter should come from the automobile fraternity. Representative automobile owners have discussed the matter with me, and know that I favor a revision of the laws.

"The French government, I understand, has adopted a law removing all speed regulations, and, instead, imposes heavy penalties in case of accidents or where damage results from high speed, and I am informed that this law has proved very effectual in that country."

When the Mayor's position on the subject was learned, Speaker Meehan at once introduced his bill, and the measure was passed. It provides for the examination of all chauffeurs by the City Inspector of Boilers and Elevators, who will issue a license, charging a fee of \$2 therefor, and allows a speed limit of 10 miles an hour in the city streets and parks.

INDIANA REGISTRATION SLOW.

Special Correspondence.

SOUTH BEND, IND., May 26.—Judging from the number of automobilists who have paid the license fee required under the Indiana automobile law which went into effect April 15, 1905, South Bend ranks as the second automobile city of the state, Indianapolis alone leading in the number of licenses issued.

In Indianapolis there are estimated to be about 500 automobiles, but up to date only 278 owners have paid license fees. South Bend comes next with 80 registrations, and the following record of the other larger towns is instructive, if not amusing. Evansville, the second city in the state in population, but 14 licenses have been issued; Fort Wayne, 78; New Albany, a city of the third class, not a license has yet been recorded; Lafayette, 35; Muncie, 57; Richmond, 45; Anderson, 31; Logansport, 20; Kokomo, 17; Marion, 40; Hammond, 9, and Michigan City, 4.

Secretary of State Daniel E. Storm has advised the county prosecutors to begin suit at once to force the registration of machine owners who have not complied with the provisions of the law, and as a result of this a large increase in the registration is expected within the next few weeks.

WASHINGTON REGISTRATION.

New State Law Requires Renewal Fee of \$2 Annually.

In line with other States of the Far West, the State of Washington enacted in the last Legislature a law requiring every owner of an automobile or motor vehicle to file with the Secretary of State a statement containing his name and address, and a brief description of his car or cars, accompanied by a fee of \$2, for the purpose of registration. The law differs from most others, however, in requiring that the application shall be filed each year, before June 1. This, it would seem, should make the law plainly unconstitutional, the annual fee demanded constituting not only a license but a tax clearly not necessary as a mere registration fee, since one registration is sufficient until a car is sold. The fourth section stipulates that the renewal fee shall be \$2.

The number of each certificate issued must be displayed on the back of each car, in light colored Arabic numerals at least four inches high on a dark background, and be preceded by the letters "Wn."

Non-residents are exempt from the registration clause if they have complied with a similar law in the State, Territory or Federal district of their residence, and display their registration numbers on their cars.

Speed limits are fixed at one mile in 5 minutes (12 miles an hour) in the thickly settled or business portions of cities and villages; at one mile in 2 1-2 minutes (24 miles an hour) in the open country; and at one mile in 15 minutes (4 miles an hour) at crossings and crosswalks in cities and villages when any person is upon the same. Speed must at all times be no greater than is reasonable and safe, having regard to the traffic and use of the way by others; racing on public highways and in parks is expressly forbidden.

Cities, towns and counties are denied power to require any other license or permit for use of the roads than the State certificate of registration, except for vehicles offered for public hire.

Gasoline cars must be fitted with mufflers, and these must not be cut out or disconnected within the limits of any city or village. During the hours of darkness at least one lighted lamp must be carried fixed upon some conspicuous part of the car and showing white light to the front and red to the rear, and shall have the registration number painted in dark Arabic numerals across the white glass front.

The car must also be equipped with good and efficient brakes and a bell or horn.

Every reasonable precaution to prevent frightening horses must be observed, and if an animal appears frightened the person in control of the automobile must slow it down and, upon request by signal or otherwise from the driver of the horse, must bring the car to a standstill until the animal appears to be under the control of its driver, unless it seems necessary to proceed in order to prevent an accident.

Penalty for violation of any of the provisions of the act is a fine not exceeding \$100.

KENTUCKY BRIDGE TOLL RAISED

Special Correspondence.

LOUISVILLE, Ky., May 28.—Automobilists in Louisville and the southern-central section of Kentucky are preparing to make an emphatic protest against the recent action of the board of directors of the company controlling the private bridge over the Kentucky river in Jessamine county, in raising

the bridge fare for automobiles from 35 cents to \$1.50. The advance was made without notification to the automobilists, and became known Sunday morning when J. T. Tunis, of Lexington, was compelled to pay the advanced charge.

Mr. Tunis took the matter up with other automobilists of Lexington, and referred it to the Louisville Automobile Club for action. Immediate steps will be taken by the combined force of automobilists in the state with a view to having the discriminatory charge curtailed. This is one of the two private bridges spanning the Kentucky river, the other being on the Richmond Pike. The Jessamine and Richmond pikes are the best driving roads in the state, and are necessary to a thorough tour of the bluegrass section.

A.C.A. RETAINS COUNSEL.

To Represent Members in Case of Arrest—Will Furnish Bail.

At a recent meeting of the board of governors of the Automobile Club of America, the following resolutions were adopted, which is but another step in its efforts to discourage reckless driving and also to afford protection to its members:

"Resolved, First, that the club desires to again put itself on record as unalterably opposed to reckless driving on public highways, and urges upon its membership the utmost courtesy for other users of the road;

"Second, that it is equally opposed to the petty and annoying persecution to which some of its most careful and conscientious members have been subjected in various localities through the laying of police traps and otherwise. To resist such persecution, and to aid its members in their legitimate use of the common highway, the law committee is hereby authorized to retain special counsel."

Acting in accordance with these resolutions, the law committee has retained Alfred E. Ommen, who recently retired from the office of city magistrate. Judge Ommen is retained by the year, and will represent any member in case of arrest. He is prepared at any time to furnish cash bail, and his services will be available at any hour, day or night.

INVESTIGATING MINNESOTA LAW.

Special Correspondence.

ST. PAUL, May 26.—Attorney General E. T. Young, of Minnesota, has been asked to give an opinion on the constitutionality of the Minnesota automobile license law. It is contended that the law is in violation of the State and Federal constitutions for the reasons set forth by Attorney General Sturdevant, of Wisconsin, who recently held that a bill before the Wisconsin legislature providing for a license fee for automobiles is in violation of the United States Constitution.

"I am inclined to think that there is a good deal in the claim of Mr. Sturdevant, although I have not looked up all the cases to which he refers," said Mr. Young. "Several attorneys in the Twin Cities have suggested to me that the Minnesota law is unconstitutional, and I intend to investigate the matter."

The teacher had been telling the class about the rhinoceros family.

"Now, name some things," said she, "that it is very dangerous to get near to, and that have horns."

"Automobiles!" replied little Jimmie Jones promptly.—Pittsburg Post.

ST. PAUL CLUB HOST.

Entertains Congressional Inspection Party
Enroute to Portland.*Special Correspondence.*

ST. PAUL, MAY 26.—The members of Congress who will inspect the Lewis and Clark Centennial Exposition at Portland were the guests of the St. Paul Automobile Club last Saturday. The Senators and Representatives were escorted about the city in automobiles, visiting Como Park, Fort Snelling and the Summit avenue residence district.

Those composing the party were: Senators H. C. Hasbrough, of North Dakota; John W. Daniel, of Virginia; C. D. Clark, of Wyoming; W. P. Dillingham, of Vermont; J. B. McCreary, of Kentucky, and F. G. Newlands, of Nevada; Representatives J. A. Tawney, of Minnesota; J. S. Sherman, of New York; J. C. Sibley, of Pennsylvania; W. A. Rodenberg, of Illinois; C. L. Bartlett, of Georgia; R. L. Henry, of Texas; G. S. Legare, of South Carolina, and Henry C. Loudenslager, of New Jersey. The members of the St. Paul Club who entertained the visitors were E. A. Young, Theodore W. Griggs, F. W. Ramalay, S. W. Dittenhofer, J. C. Wood, William Bannon, Gustave Scholle, Henry Rothschild, J. S. Spargo, L. F. Dow, R. H. Edwards and Mr. Weyerhauser.

MEISELBACH CARS.

Work to Be Pushed Soon on Friction
Drive Commercial Vehicles.*Special Correspondence.*

MILWAUKEE, May 27.—It is expected that work in the new factory erected in North Milwaukee by the A. D. Meiselbach Motor Vehicle Company, which was incorporated last year with \$50,000 capital stock, will be pushed more vigorously when the teamsters' strike in Chicago has been settled, as several Chicago capitalists are only awaiting its termination to provide working funds for the plant.

The company has completed two cars and three others are almost finished, but changes are to be made in the machines to be built in the future; one change will be the use of a larger friction drive wheel.

The main feature of the Meiselbach motor vehicles, which are designed for commercial purposes, is the McKaig double disc friction drive, which is very simple in construction. Two plain discs driven by a friction pulley, which is slidably mounted on a key-seated shaft, attached to the crank-shaft of the motor with a universal coupling, have been substituted for the customary clutch and movable gears. The friction wheel is moved by a lever to different positions between the discs to attain all speeds from the lowest to the highest. When the friction wheel is placed at the outer edge of the discs, the vehicle will move at the lowest speed and greatest power. As the drive wheel is moved toward the center of the discs the speed is increased, and when it is drawn forward past the center it is in a position to back the car.

The discs are brought into contact with the friction drive pulley by a truss consisting of two levers which are connected with two adjustable springs.

On the right side the chain sprocket is mounted directly on the disc shaft end, but on the left side it is mounted on a secondary shaft which is driven by means of spur gears from the disc shaft in order to reverse the motion and cause the sprocket to turn in the same direction as the one on the right hand side.

Idlers on the outer faces of the discs are forced against the discs by a foot lever in order to bring the discs together with extra pressure, which is especially desirable in climbing steep hills. The transmission has an automatic release rod connected to the steering gear, which releases either disc in turning corners, thereby doing away with the use of a differential gear and rendering available an ordinary one-piece wagon axle.

ORPHANS' DAY IN NEWARK.

Special Correspondence.

NEWARK, N. J., May 27.—The New Jersey Automobile and Motor Club, at a meeting held last week, took action on the observance of Orphans' Automobile Day in this city. A committee was appointed to look after the little children of the various institutions, to be taken for a ride and entertainment to a pleasure resort outside of the city.

The committee consists of President James R. English, M. D.; B. M. Shanley, J. H. Dawson, Dr. H. C. Harris, J. W. Mason, J. H. Wood, R. C. Jenkinson, Frederick R. Pratt and C. S. Wells.

RECENT INCORPORATIONS.

Majestic Automobile Co., New York City; capital, \$5,000; to manufacture automobiles. Incorporators, George H. Mulligan, Emily C. Mulligan and William J. Greene.

Buffalo Specialty Co., Buffalo, N. Y.; capital, \$500,000; to manufacture automobiles. Directors, Oliver Cabana, Jr.; E. T. Brown and M. J. Cabana, all of Buffalo.

Havana Automobile Co., Paterson, N. J.; capital, \$300,000; to manufacture automobiles, and to operate an automobile freight business in the West Indies and elsewhere. Incorporators, William Schek, Jr., West Nyack, N. Y.; Louis H. Pink and Walter Moffet, of New York City.

C. N. Michels Co., Chicago, Ill.; capital, \$30,000; automobiles, machinery, etc. Incorporators, Christian N. Michels, Joseph R. Oliver, and William C. Wieland.

Newcomb Carburetor Co., Jersey City; capital, \$12,000. Incorporators, Edward C. Newcomb, L. Crosby and Ward B. Chamberlin.

Columbus Auto Axle Co., Columbus, O.; capital \$25,000. Incorporators—C. O. Harries, J. H. Plenkap, W. E. Campbell, J. A. Kidwell and C. G. M. Cramnitz.

Automatic Tool Co., Norwalk, Conn.; capital \$20,000; to deal in automobiles, motor fittings and motors. Incorporators, Elbert N. Sipperly and Elbert N. Sipperly, Jr., of Westport, and Charles H. Jimmerman, of Norwalk.

NEWS AND TRADE MISCELLANY.

The hill-climbing contest of the Automobile Club of Pittsburg which was scheduled for the last week in May over the course on Hebberton hill, Pittsburg, has been indefinitely postponed.

The Baillie Basket Company, formerly located at 37 Harvard street, is now occupying the three-story building at 85-87 Hudson street, Boston. The company was forced to secure larger quarters owing to the continued increase in its business.

The Jackson Automobile Company, of Jackson, Mich., announces the appointment of the following agents for the sale of its cars: Monroe Automobile Co., Rochester, N. Y.; Sioux Falls Auto and Supply Co., Sioux Falls, S. D.; C. R. Dench, Erie, Pa., and L. C. Howard, 308-310 West 59th street, New York City.

The Union Automobile Company, recently incorporated in St. Louis, is pushing to completion its garage at the corner of Taylor and Walton avenues. Temporary offices of the company have been established in the Frisco Building.

The Logan Construction Co., of Chillicothe, O., is now planning to increase its plant by the construction of a two-story addition 156 by 40 feet.

B. F. Leavitt, formerly connected with the Brooklyn Automobile Company, has formed the Uncas Specialty Company, under which name he is manufacturing and marketing the Leavitt patent ball contact timer. The company is located at 21-36 Shipping street, Brooklyn.

The Mechanics' Garage and Repair Co., now conducting a general auto storage and repair business at 324 East Third street, Los Angeles, Calif., was recently organized with a capital stock of \$25,000. W. J. Burt, the secretary of the company, was for a number of years connected with the Harris Automatic Press Co., of Niles, O.

The Kirk Manufacturing Company, of Toledo, O., makers of Yale cars, have recently added three salesmen to its traveling force in order to thoroughly cover the territory not now cared for by its agents. The company is largely increasing its output for the present year, and in 1906 expects to practically double the production of 1905.

An automobile repair and storage station will be opened on Albany street, Herkimer, N. Y., by Edward Klein, who was formerly with the Miller-Mundy Motor Co., of Utica. A line of supplies and sundries will be carried in stock.

The Reo Automobile Co., of Buffalo, which was left without a head through the recent death of Charles W. Roe, has been purchased by Sylvester B. Eagan, who, together with Walter Hayes and George Andrews, will continue the business under the name of the Buffalo Motor Car Co. The new company will be capitalized at \$5,000, and act as Buffalo agent for the Autocar and White steamer.

The Monarch Motor Car Co., of Salt Lake City, Edgar S. Darling, manager, announces that its first car will be completed about June 1, and after it is given a thorough test, the company will erect a factory and commence regularly the manufacture of automobiles.

The Harold E. Thomas Challenge Cup has been officially accepted by the A. A. A., which will act as custodian of the trophy under the provisions of the deed of gift. The first contest for the cup was held during the race meet of the Chicago Automobile Club at the Harlem track, Chicago, on May 27, 29 and 30, results of which are announced elsewhere in these pages.

The Continental Caoutchouc Co., formerly located at 298 Broadway, New York City, is now occupying its new quarters at 43 Warren street, where its office and store-room space, and shipping facilities are better suited to the requirements of the business.

Three new "Seeing New York" automobiles have recently been completed by the Electric Vehicle Company of Hartford for the American Sight Seeing Company of New York. The new cars are of forty-eight passenger capacity each, the seats being gradually elevated so that the occupants of any row of seats are able to overlook the heads of persons sitting in front of them. The machines are fitted with canopy tops.

The Motor Car Specialty Company, 147 East State street, Trenton, has secured the agency for the Wayne cars for Mercer County, N. J.